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Factors Influencing Participation In Screening And Clinical Trials

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ABSTRACT

The reported research was an investigation of attitudes and beliefs associated with participation in screening programmes and clinical trials, carried out by general practitioners. Particular focus was given to cardiovascular risk-reduction.

The work comprised two main studies. The preliminary study was entirely exploratory, designed to guage public attitudes towards GP involvement with preventive screening programmes and clinical research; and to identify the range of variables associated with participation in such projects. The subsequent study utilised a more formal approach in which the Behavioural Intention Model was utilised to evaluate the power of influencing factors.

Both studies employed self-completion questionnaires, developed from preliminary in-depth interview data. For the first study instrument distribution was effected by personal approach, for the second study postal distribution was employed.

In all, 1,037 respondents contributed to the surveys - 442 to the preliminary exploration and 695 to the follow-on study. These represented response rates of approximately 65% and 36% respectively.

The main findings were that attitudes towards screening were generally favourable, though there was less conformity in attitudes expressed towards clinical trials. These findings were reflected in reported participatory intentions.

No evidence was found of any factors which might pose widespread barriers to screening participation, though some potential deterrents were identified for older women. It was also noted that other potential deterrents may have been masked by the 'middle class' bias of the sample.

Major deterrents to trial entry were identified as worries about: side-effects, acquired resistance, discontinuation of current effective medications and lack of adequate information. These all interacted with the 'guinea pig' factor.

Response rates and responses associated with medical and non-medical sampling sources were also discussed; and consideration was made of the general utility of the Behavioural Intention Model for research of this kind.

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PART I

INTRODUCTION TO THE THESIS

CHAPTER I

GENERAL INTRODUCTION

The work described in the thesis was an investigation of public attitudes and beliefs associated with preventive medicine and clinical research. Particular focus was given to screening and drug trials for cardio-vascular risk-reduction, within general practice settings.

The primary purpose of the reported research was to gain some understanding of people's attitudes towards GPs' involvement with clinical research; and to identify factors influencing participation in preventive projects. A secondary objective was to test the Behavioural Intention Model (Fishbein and Ajzen, 1975) as an effective tool for the prediction and understanding of participatory intention.

The impetus for the thesis research came from an early association with a medical research project, the Health Maintenance Study. In this project doctors are investigating ways of reducing cardiovascular risk within general practice settings. The research entails both screening and clinical trials of drugs.

Cardiovascular events - heart attacks and strokes - are responsible for many premature deaths and much chronic disability within our society today. A considerable proportion of these events could be avoided by the effective application of current medical knowledge, and there is well-founded hope that new drug treatments may further help to reduce cardiovascular risk. Such preventive application has been advocated by the World Health Organisation (WHO), and vocally encouraged by our Government. Much work has been undertaken to ascertain cost-effectiveness of preventive screening programmes and there is a wealth of literature representing a biomedical perspective of prevention. However, less work has been undertaken into public feelings about preventive medicine and screening, especially as it related to cardiovascular disease (CVD), and even fewer studies have been devoted to public attitudes to clinical trials.

People's attitudes and beliefs are almost certainly an important factor in their decisions as to whether or not they participate in screening or clinical trials, and our lack of knowledge in these areas may well be contributing to our failure to reduce the incidence of cardiovascualr events. If preventive medicine is to be put into effective practice it will require active participation by both health professionals and the

people they seek to serve. Similarly, clinical trial research can only be of value if it attracts compliant entrants.

However, until more is known about the attitudes people hold towards prevention, and the beliefs which underly these attitudes, the development of appropriate education and health promotion campaigns will remain somewhat 'hit and miss' and the potential benefits of preventive medicine may remain unrealised. Equally, until the factors influencing participation in clinical trials are more fully understood, problems asociated with recruitment and compliance cannot be adequately addressed.

Therefore, an investigation of the area was undertaken with the general aims of achieving some understanding of public feelings towards GP involvement with preventive medicine and clinical research; and to identify factors associated with public participation in these activities. In accordance with these aims, two studies were undertaken. The first was a purely exploratory investigation of the topic, whilst the second was a more formalised approach to understanding, in which Fishbein and Ajzen's Behavioural Intention Model was employed.

Each of these studies will be presented in detail, including their specific aims and objectives, after a more global introduction to the research area.

1. PREVENTIVE MEDICINE, SCREENING AND CLINICAL TRIALS

1.1 BACKGROUND TO RESEARCH AREA

Preventive medicine contrasts with curative medicine in that whereas the latter seeks to provide a restoration to health when something has already gone wrong, the aim of the former is to prevent ill health from occuring. Thus the aspiration is towards health maintenance rather than health restoration.

In the past, the practice of medicine has generally been oriented more towards the curative than the preventive approach. However, this balance is gradually changing, and more than a decade ago the shift of emphasis was endorsed by the Government in a consultative document entitled 'Prevention and Health: Everybody's Business'. The need for a change away from the curative, towards the preventive approach to ill health, in all sectors of the health service, was stressed in this document; not least because, "curative medicine may be increasingly subject to the law of diminishing returns". Also, a need was recognised for individuals to assume a greater responsibility for their own health, since "the greatest potential, and perhaps the greatest problem for preventive medicine,now lies in changing behaviour and attitudes to health"(HMSO,1976).

As indicated above, preventive medicine entails the early detection of latent disease, or susceptibility to a disease; and the implementation of measures which are known, or believed to, hold off the development of the disorder. Public preventive health behaviour, is an essential part of the successful application of any preventive medicine programme. It has been defined as "any activity undertaken by a person who believes himself to be healthy, for the purpose of preventing disease or detecting disease in an asymptomatic stage" (Kasl and Cobb 1966). Participation in screening is, therefore, an important preventive health behaviour.

Screening may be understood as "medical investigation which does not arise from the patient's request for advice for a specific complaint" (Nuffield Provincial Hospitals Trust 1968). However, most screening services are offered for the detection of fairly specific problems, though more general health checks - 'multiphasic' screenings - are becoming more common, especially in the USA. In Britain, multiphasic examinations are usually confined to checks for employment or insurance purposes and the validity and cost-effectivness of routine application of this type of health check have been questioned (eg The South-East London Screening Study Group, 1977; Holland, 1982).

Nevertheless, the case for several specific screening services has been established for both children and adults. These include antenatal screening checks and infant screening programmes, such as the Guthrie test for phenylketonuria, and health visitor testing of speech, vision, hearing, and motor and intellectual development. Rubella tests for older girls (and women) are also fairly common. In adults, screening for tuberculosis used to be the most widely applied screening service, but developments in the prevention of tuberculosis have become so effective that mass screening for this disease has now ceased.

Currently, the Papanicolaou smear test for cervical cancer is probably the most common type of screening, but other programmes, such as those for the early detection of breast cancer, and general practice screening for cardiovascular risk, are rapidly becoming more widespread. Screening for all the above mentioned conditions is justified by the fact that they are common and/or potentially dangerous conditions which can be easily and economically detected and for which effective treatments are available.

Once screening reveals a person to be at risk, appropriate preventive measures should be instigated. The establishment of preventive measures comes about as a result of clinical research. In some instances the appropriate preventive treatment is almost entirely dietary, in others surgical intervention may be indicated, but in many cases the treatment employed involves drug therapy and the value of drugs can only be determined through proper clinical trials.

'Clinical trial' may refer to assessment of any therapeutic procedures, but the term is commonly associated with the testing of drugs and it is defined here as a scientific test of a drug whereby its postulated effects, and its side-effects, may be evaluated. A variety of research designs may be employed in clinical trials and the final choice of design will depend upon such factors as the type of drug involved, the reason for the testing of the drug and the type of subjects on whom the drug is being tested. However, to be effective and scientifically sound, the design used must involve some sort of control group who are as similar as possible to the experimental group in all respects except that of the drug administered.

Clinical trials of drugs have long been an important, if often controversial aspect of medical research. They have been undertaken within the settings of hospital treatment, general practitioner care, and with special volunteers paid by pharmaceutical companies. These trials may involve new drugs or they may involve drugs which are already well established medicines for certain treatments being tested for other

therapeutic value. Where new drugs are concerned clinical trials are a legal requirement. It is to be hoped that clinical trials are conducted only on participants aware of the fact that they are participating in clinical trials, and, who do so having given their 'informed consent'. However, it is evident that this is not always the case (Faulder, 1985) and it must be conceded that on some occasions, especially within hospital and general practice settings, trial entrants may be unaware of their research-subject status.

Nevertheless, it remains true that properly conducted clinical trials using human subjects represent the only reliable method of determining the value or otherwise of any given drug for any particular condition.

Without screening programmes to detect incipient health problems and clinical trial research to determine appropriate treatments; morbidy and mortality due to numerous causes, would be far greater than it is at present. Continued endeavours in preventive research and the effective application of resultant knowledge hold the promise of further improving the nation's health. Thus, it would seem that the need for screening programmes and clinical trials is a very real one.

However, their potential value can only be realised if people take advantage of screening opportunities and agree to participate in clinical trials. Also, although the arguments for screening and clinical research are strong, there are several factors which may operate to prevent their effective application. These represent issues of particular importance to screening and clinical research and will be considered in the following section.

2. SPECIAL ISSUES RELATING TO SCREENING AND CLINICAL RESEARCH

The special issues which relate to screening and clinical trials are basically methodological concerns of participant recruitment and compliance with research regimens. These concerns represent the core methodological issue relating to research of this type, and other important issues of ethical concerns, volunteer bias and anonymity relate back to this key problem.

2.1 PARTICIPANT RECRUITMENT AND COMPLIANCE WITH RESEARCH REGIMENS.

As stated earlier, although the arguments for preventive research and associated clinical trials are strong, they can only be effective if people participate in such projects. The very best designed research can only be of value if it is able to attract complying participants. Thus an immediate problem facing researchers engaged in projects which entail screening or clinical trials, is that of attracting appropriate people who will effectively co-operate.

Even well established screening procedures suffer inadequate utilisation, so the prospects for new research programmes may not be particularly bright. For example, two decades of screening for cervical cancer have failed to have much impact on the incidence of the disease, not because the test is ineffective, but because it has failed to attract sufficiently wide application (Fowler 1985). There are indications that responsibility for the failure of application resides, to some extent, with both doctors and patients (Chamberlain, 1984). However, since GPs receive extra payments for the performance of cervical smears, it does not seem unreasonable to suggest that responsibility for ineffective application may rest quite heavily on the patients.

Similarly, whilst patients may express verbal support for the concept of screening (eg O'Brien and Hodes,1979; Cartwright and Anderson 1981), actual attendances achieved rarely match up to such high levels (O'Brien and Hodes, 1979; King, 1982). What is more, there is evidence (eg. Goodman, 1973) that it is those who would most benefit from screening who are the least likely to take advantage of such services.

Just why people do not make full use of the screening services available is not entirely clear, especially since there does seem to be popular favourabilty to the concept of check-ups. It would seem that there are some factors operating to influence participatory decisions which are not yet understood, or which have not been adequately addressed. If more people are to be encouraged to participate in screening, further attempts to identify such influential factors are clearly required.

In respect of clinical trials, recruitment and compliance may pose major methodological problems. Trial entrants need to be representative of the population to whom eventual administration of the drug is envisaged and they need to be committed to co-operate with research regimens. Even under normal therapeutic conditions compliance with drug regimens is far from optimal (eg. Peck 1978, Ley 1982), and Porter (1969) found this to be equally true of clinical trials. Indeed he concluded that "Every patient is a potential defaulter. Compliance can never be assumed."

Compliance is clearly very important to research results and its assessment would seem to be essential. But regardless of Porter's warning, the issue of compliance has rarely been adequately addressed in subsequent published studies of clinical trials.

For trials conducted within in-patient populations, thorough monitoring of drug administration may be fairly easily achieved. But, within general practice settings, adherence to prescribed regimens is much harder to ensure since GPs must rely almost exclusively on their patients to properly carry out instructions. Apart from the obvious problem of patients deliberate mis-reportings of their compliance, there is also a very real problem of patients believing that they are carrying out 'doctors' orders', when in fact they may have forgotten or misinterpreted regimen instructions (Ley et al.,1976).

Furthermore, although much work has been undertaken in the area of regimen defaulting, there is still no profile of the 'classic complier' or the 'classic defaulter' to assist the clinician in assessments of who may, or may not, be entrusted to carry out regimen instructions. If we knew more of what people feel and believe about clinical trials we would be in a better position to understand both the influences on participation and compliance and their implications for research outcome. Therefore, unless or until adequate research is undertaken, problems of adequate recruitment and compliance cannot be effectively addressed.

Regretably, little research has been published relating to this issue or indeed of public attitudes towards any medical research using human subjects. Saurbrey et al.(1984) undertook an investigation into patients attitudes towards the use of human subjects in medical research; and reported that 98% of their respondents "considered patient and doctor collaberation on new therapeutical methods both necessary and desirable". They also stated that over 80% of their sample would agree to participate in certain specified research projects solely on the guarantee of the doctor. However, theirs was a hospital-based study undertaken in Denmark, and no comparable work seems to have been performed in England, or relating to research run in general practices.

If people hold unfavourable attitudes towards such projects the attraction rate of subjects will be small and possibly biased, and unless particular aspects of concern are identified they cannot be given consideration. Therefore, the problem of securing participation in screening programmes and clinical research is not resolved and the need for assessment of general attitudes towards this type of research is obvious, though as yet unmet.

Another unresolved problem which has special relevance for screening programmes and clinical research is that of determining the most appropriate target population. For projects like cervical cancer screening, the population is clearly limited to one sex. Equally, since the age group of those most at risk was also established, the parameters of the target population were further determined (though these are now a matter of controversy and are currently under review). However, in other clinical research programmes the selection population may not be so easily defined.

A growing problem facing many clinical researchers is that of whether or not to include the elderly in their target population. The proportion of elderly people within the general population is progressively increasing, and this sub-group represents a large proportion of those requiring medical attention. There are many health problems attendent upon advancing age which detract from the quality of life whilst not posing threat to life. Routine screening of elderly people in general practice has been found both to benefit the patient and be cost-effective in the long term (Pike 1978).

Regarding clinical research, where study aims are the identification of treatments for general usage, the selection population should include elderly people if a representative sample is to be acheived. However, many randomised clinical trials have systematically excluded the elderly from research programmes designed to answer theraputic questions which are of particular relevance to older people (Miller,S. 1985). For example, the treatment of hypertension is an important clinical issue for elderly people, yet most major trials relating to this have not included participants over the age of 60.

It has been suggested (eg by Miller) that perceived problems of poor comprehension and non-compliance may have been responsible for researcher decisions to exclude the elderly from clinical trial projects. However, other work in this area has indicated that poor comprehension and non-compliance may not be a prerogative of the elderly.

Stanley et al,(1984) investigated the competence of elderly patients to give informed consent to research participation, and found that comprehension of consent information was considerably greater among younger than older patients. Nevertheless, there were no differences between the young and the elderly in respect of their choices about projects in which participation was 'reasonable'.

However, Philip Ley and his colleages have shown that poor comprehension of medical information is a problem in all sections of the population. Furthermore, they demonstrated that lack of comprehension of information imparted by doctors was an important factor in patient dissatisfaction with communications, and on non-compliance with medical advice and regimes (Ley et al.,1976; Ley, 1977).

Encouragingly, Ley at al. have also demonstrated that comprehension and retention of medical information can be facilitated by giving patients suitable written 'back-up', as well as verbal information (Ley et al.,1975). In addition, Myers and Calvert (1978) found that providing patients with written information about side effects had the effect of decreasing regimen defaulting. As long as 'back-up' material is presented in a manner appropriate to the visual accuity of the elderly, benefits to comprehension and retention would be just as applicable to them as to younger people. Since understanding and remembering instructions are necessary factors for compliance and since non-compliance is a fundamental problem for clinical research, the implications of these findings for doctors soliciting research participants are clear.

2.2 ETHICAL CONCERNS

In any research, ethical concerns must govern methodological design, not only for moral reasons, but also because ethical concerns often have methodological implications. This is particularly so in clinical research on human participants where the most fundamental ethical issue is that of informed consent. For example, if people are involved in research projects for which they have not given proper informed consent, they may not fully understand the relevance or importance of regimen instructions. Equally, they may harbour unaddressed worries (founded or unfounded) about participation.

Either way, frank discussions between researcher and participant are essential for both individual rights and study validity. Without the full informed consent of participants, sample attrition may be considerable and/or non-compliance with experimental instructions may obtain. Work which supports this proposition has already been cited (eg Ley et al., 1975, 1976, section 2.1 above).

The Saurbrey study also mentioned previously (Saurbrey et al, 1984), highlighted the importance of informed consent from the point of view of potential participants. In an "interview study focusing theraputic trials" 114 in- and out- patients from a department of internal medicine in a Danish hospital were interviewed on the basis of a questionnaire with 4 key questions. These questions related to attitudes to medical trials with humans as subjects; patient emphasis on informed consent; attitudes to the inclusion of patients who could not give informed consent; attitudes to tentative participation in 4 concrete projects.

Their results revealed that patients were generally in favour of medical trials being performed, as outlined earlier, but that they should be conducted in the light of informed consent. It was reported that 88% of informants considered information of patients participating in trials a prerequisite, and that 86% accepted participation in scientific trials based on the guarantee of the doctors responsible. Inclusion of patients unable to give informed consent eg. children and the mentally handicapped,was supported by 75% of people interviewed, though of these, 77% added the proviso that the consent would have to be given by the relatives of these patients.

Patient attitudes towards the need for informed consent were evident from this study and British patients' desires for full information about their conditions and treatment have been demonstrated by several other researchers (eg Cartwright 1967, Ley and Spelman 1967, Cartwright and Anderson 1981, Ley 1982).

However,'informed consent' is a rather ill-defined phrase and may mean different things to different people. Doctors may believe they have obtained informed consent because they have given patients the relevant information and the patient has agreed to participate in the project. However, Ley has shown in various studies that the amount and quality of information given to patients, as well as patient comprehension and retention of such information is often far from optimal (eg Ley 1977,1979, 1982).

If patients do not understand what their doctors say to them, and feel dissatisfied with the quality of their communications with him or her, then by definition, these patients cannot give informed consent, and the consequent methodological implications apply.

Unfortunately, failure of comprehension by the patient may not be the only bar to securing informed consent. In a recent study of physicians' perspective of informed consent, Taylor and Kelner (1987) reported that

"Physician responses indicate that they regard informed consent as an intrusion into the doctor-patient relationship".

These physicians also felt that the need to obtain informed consent to scientific experiments contributed to "decreasingly effective doctor-patient communications". The physicians interviewed in this study were all breast cancer specialists from 8 different countries, including England and Scotland. One of their major objections to a research consent form was that it accentuated their dual role as care-givers and scientific investigators, making them uneasy in their relationship with the patient. If this is true of specialists, it must also be considered a potential problem for general practitioners who involve their patients with medical research.

The issue of whether or not GPs should be involved in clinical trials is an area of contention. On the one hand people like Porter (1969) have argued that GPs are particularly well placed to run clinical trials since they have a special knowledge of, and relationship with their patients which may minimise regimen defaulting. On the other hand, others (eg. Coulehan 1985), have pointed out that there may be ethical objections to GP involvement with clinical research since the family doctor "has the healing power of persuasion, which might limit autonomy and informed consent."

In support of Porter, Cartwright and Anderson (1981) reported that approximately 3/4 of their respondents felt that it was easy to talk to their doctor and to ask him/her questions. Similarly Ley found that people expressed greater satisfaction with the quality of communication they experienced with their general practitioners than with hospital doctors. If proper informed consent and subsequent compliance with regimens is dependent upon good doctor-patient communications, it would seem that GP involvment in clinical trials might be scientifically and ethically quite sound. Conversly, if consent is obtained as a function of 'limited autonomy', ethical and possibly methodological validity would have to be questioned.

The many aspects of the controversial issue of informed consent are likely to remain unresolved for some time. In the meantime it poses a potential obstacle to clinical research participation and further investigation of public attitudes to GP involvment with research, and of the extent to which people feel that they can; should; and want to; question their doctor, appears to be warranted.

2.3 VOLUNTEER BIAS

Clinical trials are most commonly conducted so that the suitability of drugs for general usage may be ascertained.

Clearly, if research results are to be at all generalisable beyond the sample serving as subjects, that sample must be representative of the population to whom the results are to be applied. Equally clearly, in the type of research projects under discussion, subjects must be drawn from consenting volunteers. But, as Rosenthal and Rosnow (1969) have pointed out, volunteer subjects constitute a "strikingly *un*representative sampling of people."

In their review of a wide range of studies indicating the peculiarities of volunteers, Rosenthal and Rosnow found that volunteers tend to be better educated, have higher occupational status, higher need for approval, higher IQ, and be less authoratarian and better adjusted than non-volunteers. However, Sheridan (1979) reported that participants in an autogenic training experiment which he conducted, proved to be far *above* norms in authoritarianism.

Rosenthal and Rosnow were reporting on people who *said* they would participate in experiments and those who *said* that they wouldn't, and they did admit that their 'volunteer effects' were flawed since many people who say that they will participate do not actually turn up for the experiment. Even so, the probability of a qualitative difference between volunteer participants and non-participants must be acknowledged.

Whilst both the Rosenthal, and the Sheridan examples of differences between volunteers and non-volunteers refered to participation in psychological experiments, it seems at least equally likely that such differences will apply to medical research programmes. Support for this supposition was offered by Bergstrand et al. (1983) who found that there were some very important risk-factor differences between participants and non-participants in a Swedish study of cardiovascular risk factor screening.

Evaluation of the relevance of volunteer bias to research outcome can only be made if the bias is identified. Of course, identification of bias in a sample does not necessarily lead to rectification of the bias, especially in clinical research where truly voluntary participation must obtain. However, it does allow for an assessment of the limitations of the sample and enable determination of the parameters within which study results can be applied. Therefore, whilst acknowledging Rosenthal's

point that reported participatory intention is not necessarily synonymous with actual participatory behaviour, it would seem important to try to identify any differences between potential participants and non-participants in clinical research.

2.4 ANONYMITY

Closely allied to the issue of volunteer bias is the issue of anonymity. Clearly, in some areas of clinical research anonymity is not a viable option. For example it would be a nonsense to conduct screening programmes anonymously if the aim of screening is to identify those at risk with the objective of implementing measures to reduce the risk. Anonymous entry into clinical trials would be equally untenable. However, in studies of attitudes and intentions relating to clinical research, anonymity of participation is an option which should be considered in terms of its costs and benefits to both participants and study results.

The main costs of true anonymity, which is perceived as such by potential participants, are preclusion of follow-up approaches and comparisons of individual participants and non-participants. Bearing in mind the problem of bias, it may be considered imperative that individual participants and non-participants be identifiable for bias assessment. Furthermore, given that it is generally accepted that bias decreases as response rate increases, it may be considered necessary to allow for follow-up contacts to be made in attempts to increase response rates.

On the other hand, if a good response rate can only be achieved by employing non-anonymous participation and the use of follow-up contacts, the achievement may be due to some feelings of coercion to comply, especially if the study is associated with the potential participant's own doctor. There is some evidence to suggest that people are more likely to respond to a questionnaire if it comes from their own GP. than if it comes from a research unit doctor (Smith et al., 1985). This may reflect a chance result, or relatively unfavourable attitudes to research units.

Alternatively, it may reflect a reluctance to 'cross' one's GP. As Kirscht (1983) stated in his paper on preventive health behavior research, "There are special problems of threat to people when questioning may imply a possible impact on future health care, or the retention of negative information in a record that is seen by caregivers." Even where the implication is a false one, if the threat is perceived by potential participants, so too might be a feeling of coercion to respond.

Apart from the obvious moral objections to such an approach, there are also methodological implications. If participation itself is achieved by coercion - perhaps because a person does not wish to jeopardise her/his relationship with the doctor by a refusal to participate - the suspicion that similar feelings may influence given reponses, cannot be easily dismissed. An assurance of participant anonymity will not guarantee against sample bias, but it should minimise bias of this sort.

3. CARDIOVASCULAR RISK REDUCTION

So far, the introduction to the thesis has been rather wide, considering aspects of relevance to the general area of preventive medicine and associated screening and clinical trials. However, the research to be presented was specifically focused on attitudes and beliefs relating to cardiovascular risk reduction programmes and attention will now be narrowed to this particular field.

3.1 EXTENT OF THE PROBLEMS CAUSED BY CARDIOVASCULAR DISEASE AND THE POTENTIAL FOR CARDIOVASCULAR RISK REDUCTION

Every year cardiovascular diseases (CVD) exact a heavy toll of premature death and disability. Circulatory diseases are the single most common cause of death in Britain today and in 1981 they accounted for half of all deaths in the United Kingdom. Of these 54% were due to ischaemic heart disease and 25% to cerebrovascular disease (strokes). Amongst males circulatory diseases are responsible for the greatest number of certified incapacity days. In 1981/82 this was 56.44 millions - more than 20% of the total working days lost through illness.

Furthermore, almost 60 million prescriptions for cardiovascular diseases were dispensed, the number being second only to presciptions for central nervous system treatments such as sleeping pills, sedatives and tranquillisers, anticonvulsants, analgesics and anti-depressants. However, whilst the number of prescriptions for central nervous system treatments went down by 3% between 1975 and 1982, the number of cardiovascular prescriptions rose by 47% over the same period (Compendium of Health Statistics, 1984).

Although the mortality and morbidity figures apply to all sectors of the population, the incidence of cardiovascular events, is greater among the lower socio-economic groups. These groups also tend to have dietry and smoking habits which increase their vulnerability to cardiovascular risk (eg. Inequalities in Health, incorporating The Black Report and The Health Divide, 1988).

The real tragedy behind these figures is that many of them could have been avoided. Indeed, to quote the Prevention of Arterial Disease Report from the Royal College of General Practitioners (1981):- "about half of all strokes and a quarter of all deaths from coronary heart disease in people under seventy are probably preventable by the application of existing knowledge." Much of this knowledge takes the form of the ability to detect those most at risk of suffering a cardiovascular event and of established beneficial life-style changes which can be publicly disseminated via health education.

There are also established drug therapies which could help to hold off cardiovascular events in those known to be at risk, and work continues to establish other effective pharmaceutical interventions which could help in the fight against these terrible diseases. But as has already been discussed, in order to effectively apply existing knowledge, people must first be screened so that those at risk may be identified. Equally, the effects of chemical intervention cannot be determined without the use of clincal trials on human subjects to indicate the efficacy, or otherwise, of any particular drug for any specific condition.

Within the specialist field of cardiovascular risk reduction much research, from both medical and psychological viewpoints, has been undertaken to investigate risk factors and preventive measures. As indicated above, the research has been quite successful and many risk factors and preventive measures have been identified. These include both physiological and psychological factors and to give some indication of the extent of this work, a brief overview of some of the psychological research, and an outline of some of the combined studies will be presented in the following section.

3.2 PSYCHOLOGICAL FACTORS IN HYPERTENSION

Hypertension has been identified as a major risk factor in the development of other more serious cardiovascular disorders such as ischaemic heart disease, myocardial infarction and cerebrovascular accidents (strokes). Approximately 90% of all chronic hypertension is essential hypertension ie. hypertension for which no physiological bases are known, and for which psychogenic origins are assumed. Once this condition is established, changes in the vasculature occur which exacerbate and perpetuate it (Folkow 1971).

However, there is now a considerable body of evidence from aetiological studies on both animals and humans, which implicates an influential role of psychological factors in the initial development of essential

hypertension (eg Obrist, 1981; Steptoe, 1981). Similarly, there is a large and growing body of literature which details the use of psychological techniques such as relaxation, stress management training, meditation, and bio-feedback in the treatment of this disease (eg Agras,1981; Basler et al,1982; Kallinke et al,1982; Crowther,1983; Patel et al 1981; Johnston,1982;); and many results indicate that some of these techniques, especially relaxation and stress management training, may be a valuable adjunct to more traditional drug based therapy (Wadden et al,1980; Steptoe,1982).

If, as it would appear they do, psychological factors influence the development of essential hypertension,the further identification of these factors, and of their role in hypertension development, must represent a priority research area. Only when it is known precisely what, and how, psychological factors influence this morbidity can any hopes be held of preventing the initiation of this disease. Likewise, given that interest in psychological treatments for hypertension is expanding within both the psychological and medical professions, a preliminary investigation of public attitudes towards the role of psychological factors in the aetiology of hypertension and to the use of psychological techniques in the treatment of hypertension would seem to be appropriate.

3.3 RESEARCH INTO PHYSIOLOGICAL AND PSYCHOLOGICAL RISK FACTORS

Several studies, from various countries, have been undertaken to investigate the risk factors associated with cardiovascular disease. For example, investigation of general risk factors has been undertaken in America (eg Kannel et al 1976) and Britain (eg Shaper et al, 1985). Other studies concerned with particular risk factors and their ecological correlates have been undertaken elsewhere. These studies include investigations of: hypertension and urban stress amongst blacks in Nigeria and America (Akinkingbe & Akinkingbe, 1977); hypertension and occupational stress (eg Cobb and Rose, 1973); hypertension and overcrowding in an American prison (D'Atri et al.,1981); and comparisons of coronary heart disease, obesity and serum cholesterol levels in Japan and in Japanese emigrants in Hawaii and California (Marmot et al.,1975).

The efficacy of special life-style change counselling (Multiple Risk Factor Intervention Trial Research Group,1982), and of pharmaceutical intervention in the prevention of CVD development (Medical Research Council Working Party,1985) have also been investigated. Four of the studies mentioned above represent major works tackling specific aspects of research into CVD risk factors and risk reduction and because of their importance to the area they will be discussed in a little more depth below.

3.3.1 The Framingham Study

A classic medical study in this field is the Framingham study which was first published in 1976, and represented the first major study of cardiovascular risk factors. From 1948 onward, a sample of over 5000 men

and women residing in Framingham, Mass. USA, were followed up in an attempt to identify factors which put people at risk of cardiovascular diseases. Clinical examinations were conducted every 2 years on all participants and there was continuous surveillance of morbidity and mortality . The results of this study showed that the chances of developing a cardiovascular disease by age 65 were 37% for a man and 18% for a woman. They also indicated that people at high risk of CVD can be effectively identified from a few factors -ie a measurement of serum cholesterol and blood pressure, a smoking history, an electrocardiogram (E.C.G.), and a determination of glucose intolerance.

This general function for identifying people at high risk of CVD was also found to be effective in identifying people at risk for each of the specific diseases, - coronary heart disease, atherombotic brain infarction, hypertensive heart disease and intermittent claudication - even though the variables used have a different impact on each particular disease. The 10% of people indentified as being at highest risk by the use of this function accounted for approximately 20% of the 8 year incidence of coronary heart disease in Framingham, and about a third of the 8 year incidence of stroke, hypertensive heart disease and intermittent claudication.

This study was a milestone in the area of research into CVD prevention. It showed that people in need of preventive medicine for cardiovascular disorders could be identified by an economic and efficient method, and it set the way for several research projects which followed.

3.3.2 The Multiple Risk Factor Intervention Trial

In this study, the Multiple Risk Factor Intervention Trial Research Group in America, investigated the effects of special lifestyle counselling. It represented a "randomised primary prevention trial to test the effect of a multifactor intervention programme on mortality from coronary heart disease(CHD)". 12,866 high risk men aged between 35 and 57 years were studied over an average follow-up period of 7 years. These men were randomly assigned either to the usual sources of health care in the community or to a special intervention programme in which they were given graduated care for hypertension, counselling for cigarette smoking and dietary advice for lowering serum cholesterol levels.

In both groups risk factor levels decreased over the follow up period, but this decrease was greater in the special intervention group men. Similarly the incidence of mortality due to CHD was lower for the special intervention group though this difference was slight, and not statistically significant. It was concluded by the authors of the report that whilst the overall results did not show a beneficial effect on CHD mortality, they did show that it is possible to apply an intensive long-term intervention programme against CHD risk factors, with considerable effect on risk factor changes.

3.3.3 The Prospective Phase of the British Regional Heart Study

Perhaps of greater relevance to our national health was the British regional heart study undertaken by Shaper et al and published in 1985. This set out to determine "the impact that elevated levels of commonly accepted risk factors make on the risk of major ischaemic heart disease in British men." It also aimed to evaluate the relative importance of the different risk factors, and to assess whether such factors continue to exert an effect on those who have already manifest ischaemic heart disease. The risk factors studied were essentially the same as those identified in the Framingham study, and the subjects consisted of 7735 men aged between 40 and 59 years, who were drawn from the registers of group general practices in 24 British towns.

Risk factors were assessed individually and in combination, and the main findings were that the annual heart attack rate was considerably greater for men with pre-existing ischaemic heart disease than it was for men free from this condition. Apart from this influence, serum cholesterol, blood pressure and cigarette smoking were found to be the risk factors of greatest value in the prediction of risk of major ischaemic heart disease. Indeed, there was at least a twofold independent increase in risk associated with any one of these factors. Of the 202 major incidents of ischaemic heart disease observed during the study, only 5 men had none of these risk factors and over 2/3rds had at least 2. Of the 5 men who showed no evidence of raised serum cholesterol, elevated blood pressure or cigarette smoking, 3 had pre-existing ischaemic heart disease.

The sobering conclusions drawn by Professor Shaper and his colleagues, were that "the levels of the major risk factors commonly encountered in British men have a marked effect on the risk of ischaemic heart disease. Modification of these risk factors in the general population constitutes an important national priority."

3.3.4 MRC Trial of Treatment of Mild Hypertension

Again in Britain, and perhaps one which could almost be seen to follow on from the British regional heart study, another study published in 1985 was that undertaken by the Medical Research Council Working Party on anti-hypertensive clinical trials. In this study the primary objective was to determine whether drug treatment of mild hypertension reduced the incidence of strokes, coronary events and early death due to hypertension in men and women aged 35-65 years. Secondary objectives were comparisons of the two drugs used in respect of their effects on the course of blood pressure, and their side effects.

Over 17,000 patients were recruited almost entirely from general practices in Britain, and a single blind, placebo-controlled design was employed. The principal results of the MRC trial showed that statistically significant lower rates of strokes, and all cardiovascular events, were associated with the active than the placebo treatment conditions and that the reduction in stroke rates was greater for patients on bendrofluazide than on propranolol. However, the beneficial effects of active treatment on the reduction of all cardiovascular events

was due primarily to a reduction enjoyed by non-smokers taking propranalol.

At first glance these results seem to indicate an encouraging role for the drug treatment of mild hypertensives in the prevention of strokes and all cardiovascular events, but it must be remembered that statistical significance is not necessarily equated with material significance. As the authors pointed out in their conclusions : "if 850 mildly hypertensive patients are given active antihypertensive drugs for one year about one stroke will be prevented." Indeed, although morbidity rates were lower in the active drug than the placebo conditions, for all categories of cardiovascular events the incidence was lower amongst non-smokers than smokers in both groups.

3.4 THE HEALTH MAINTENANCE STUDY (HMS)

The Health Maintenance Study is a current cardiovascular risk-reduction project which is being undertaken by a research team based at Oxford University in conjunction with the Royal College of General Practitioners. An outline of the HMS will be given below because it is of specific relevance to the research reported in this thesis. Indeed, the HMS was in its pre-pilot phase when the reported research commenced and the needs of the HMS provided the impetus for the first study.

The main aim of the HMS is to investigate ways of reducing cardiovascular risk within general practice settings. The accumulated evidence of previous research suggests that the effective application of preventive measures may reduce the incidence of heart attacks and strokes by at least 25% in those showing particular risk factors (eg. The Prevention of Arterial Disease Report, 1981). If the prediction of a 25% reduction in cardiovascular events is correct, and if one third of those most at risk can be identified prior to the heart attack or stroke, about 15,000 premature deaths could be prevented for every year of treatment. However, the evidence on which such predictions are based, has come from a variety of studies and it was the aim of the HMS to conduct a major nationwide study to test the prediction.

Factors to be explored in the HMS include the effects of lifestyle changes, such as the implementation of a low fat diet, regular exercising, and the cessation of smoking; and of prophylactic drug intervention. Although previous studies involving drugs have not been particularly encouraging, researchers involved in the HMS, believe that chemical intervention may be an appropriate form of prevention in certain cases.

The two major drugs being tested are atenalol and low daily dosages (50mgs) of aspirin to ascertain their effectiveness as deterents to the development of cardiovascular events in people showing particular risk factors associated with CVD. The risk factors are those which are now already quite well established, and identification of people at increased risk will be achieved via screening which will include physical

examinations by practice nurses and the use of comprehensive questionnaires.

All people who attend for screening will be given advice about healthy lifestyles. On the basis of risk-factor criteria, the 25,000 identified as being most at risk of a heart attack or stroke will be selected for invitation to entry into the placebo-controlled, randomised, double-blind clinical trials. Patients invited to participate in clinical trials will also have had to meet other medical criteria to determine their suitability for trial entry. The trials will run for about 5 years. Apart from the particular drugs to be used in this study, it differs from the other studies outlined above in that whereas they have monitored only middle-aged people, the HMS will include a sizable proportion of people over 60 in whom the risk of a cardiovascular death within the 5 year trial period is greater.

3.5 BARRIERS TO THE REALISATION OF CVD RISK-REDUCTION POTENTIAL

To date it seems research has established that those at increased risk of a cardiovascular event can be identified by fairly economic and effective means. Also, there is a strong possibility that identified risk may be reduced, both by health education and pharmaceutical interventions. However, a recurring theme in this introduction has been the observation that the effective application of existing risk-reduction knowledge requires public participation in screening programmes to identify those at risk.

A similar observation has been made regarding clinical trials - ie that the potential value of a drug can only be established if it can be properly tested on compliant trial entrants. It has also been observed (section 2.1) that recruitment to screening and research programmes and compliance with prescribed regimens represent special problems for this aspect of preventive medicine. Therefore, problems associated with securing effective participation in screening programmes and clinical trials must be considered as possible barriers to the realisation of risk-reduction potential.

3.5.1 Barriers to Screening Participation

It has been suggested that "fascination with health maintenance is strictly American" (Oppenheim, 1980), so one might be tempted to postulate that a general lack of interest in preventive medicine is responsible for our relatively low utilisation of screening services. However, there are indications that the British public are becoming more like their transatlantic fellows in both their interest in preventive medicine generally and in their awareness and concern about cardiovascular risk particularly.

For instance, in her seminal work on British patients' attitudes to their doctors and the services they offer, Anne Cartwright (1967) reported that 64% of her respondents said they would like a regular general

check up. Thirteen years later, in a repeat study, the proportion of respondents saying that they would like a preventive health check rose to 78% (Cartwright and Anderson, 1981). On both occasions two thirds of those who expressed a desire for screening checks stated that they would prefer the check to be carried out by their own GP. Furthermore, as well as reporting a greater desire for check-ups in the second study, Cartwright's respondents also expressed a greater desire for specific tests for heart disease. The proportion who spontaneously specified checks for heart disease more than doubled from 5% in 1964 to 11% in 1977.

Further evidence of popular support for the concept of CVD screening came from a study by O'Brien and Hodes (1979). These researchers investigated patients' views on screening for hypertension amongst a group of people who had been invited to be screened for this disease by their GP. All the respondents came from a single group practice and included both screening attenders and some people who had declined the screening invitation.

Of the people who took part in the survey, check-ups for people over 45 years were deemed to be a good idea by 82% of non-screened, 93% of screened and 96% of those screened who were found to be hypertensive. Even so, it was interesting to note that in spite of the general favourability expressed towards screening, attendance at the particular service concerned was only 60% of all invitees (an attendance rate of this magnitude is considered to be relatively high - eg. King, 1982). So, it seems that the national spirit is willing to endorse preventive medicine in the form of screening, even if the participatory flesh is still rather weak. Thus the earlier proposition that participant recruitment must be acknowledged as a major barrier to the realisation of cardiovascular risk-reduction potential still stands.

In addition to the recriutment barrier, another obstacle which might hinder the realisation of cardiovascular risk-reduction potential is that of doctors' reluctance to 'label' asymptomatic people.

It was stated in section 1.1 -background to research area- that popular medical criteria for the value of screening tests are that the conditions being investigated are those which are common and/or potentially dangerous and for which effective treatments are available. Not all conditions are unanimously believed to fulfil these criteria, but the foremost candidate is generally recognised to be the condition of hypertension and its associated cardiovascular risk (Bayliss, 1981).

Even so, not all medical professionals are totally in favour of screening for hypertension and it has been suggested (Hayes 1978) that the identification of disease in asympotmatic people and the subsequent labelling of these people as hypertensive, may induce more anxiety than the benefits of detection justify. Hayes based his proposition on a study of Canadian men which showed increased absenteeism from work as a result of hypertensive labelling. However, Benfari (1978 - cited in Kasl,1978) found no such effect and O'Brien (1979), in a study of British people screened for hypertension, found the reverse to be true. She found that participation in screening was associated with a reduction, rather than an inducement, of anxiety.

Be that as it may, current knowledge in this area is sparse and Mann (1984), in a psychological study related to the MRC mild hypertension study outlined above, reported that "to look at the psychological effects of screening programmes meant starting from a scientific zero point". Thus it will probably take more evidence than is currently available to persuade some physicians that the benefits of screening for cardiovascular risk outweigh its costs.

3.5.2 Barriers to Clinical Trial Participation

As argued above, effective application of current knowledge requires public participation in programmes designed to identify those in need of this application so that appropriate preventive measures can be instigated. However, whilst current knowledge may be sufficient to effect a considerable reduction of cardiovascular events, it is far from complete and further research into preventive agents must continue. Yet again, in this area, as in that of screening, the problem of participant recruitment may pose a barrier to the realisation of risk-reduction potential. Even if initial recruitment is achieved, there is an additional problem of securing compliance with research regimens which, if not resolved, could invalidate research results and hamper progress in the field of preventive medicine.

In section 2.2 - ethical concerns - it was argued that true informed consent should be a prerequisite for clinical trial entry, although it was also suggested that such consent might not always be obtained. In addition it was proposed that lack of true understanding of the project and prescribed regimen instructions, could have detremental effects on proper compliance with the research programme. The issue of informed consent is therefore an important issue to be considered when potential barriers to research are investigated.

Another issue considered in the ethical concerns section was that of whether or not GPs should involve their patients in clinical research. Physicians' views about this are very important and will influence their decisions as to whether or not they engage in research activities within their practice. Patients' views are equally important, although they may be in a less secure situation than their doctors when it comes to deciding whether or not they should participate in trials if asked to do so.

Very little is known about public attitudes to GP involvement with clinical research, or to the beliefs people hold about clinical trial participation. But, if attitudes are unfavourable and/or if there are common worries or misconceptions relating to participation in clinical trials, the implications for effective trial entry are bleak. Furthermore, until more is known about them, percieved problems which may be acting as deterents to compliant participation cannot be addressed or resolved.

Therefore, factors influencing participation in screening programmes and clinical trials must be investigated if barriers to the realisation of cardiovascular risk-reduction potential are to be broken down. This issue will be considered in the following section.

4 FACTORS INFLUENCING PARTICIPATION IN SCREENING AND CLINICAL TRIALS

4.1 ATTITUDE RESEARCH

"There is now a general consensus that health care utilisation cannot be understood on the basis of health status alone, but that social, economic, demographic, attitudinal and motivational variables must also be taken into account when any predictions of take-up are made" (Leavitt 1979).

This intuitively sound observation suggests a fairly straightforward approach to the understanding of health care utilisation, but the apparent simpilicity of it is deceptive. One of the major problems it presents is how attitudinal variables should be defined and measured. From Allport to Zanna attitude researchers have offered different definitions of what 'attitudes' represent, and some writers have counted over 30 different definitions of the word (Berkowitz 1980).

The simplest conception of an attitude was offered by Thurstone in the early days of attitude measurement. It holds that attitude is solely an evaluative or feeling reaction so that a person's attitude towards an object or issue represents the favourableness or unfavourableness that (s)he or she feels towards it. Thurstone's own definition of an attitude was that it is; "the affect for or against a psychological object" (Thurstone, 1931).

A more complex definition was provided by Allport (1935) who defined an attitude as a readiness to respond in a particular way to the attitude object or issue. More recently, some social psycologists have offered an even more complex definition of an attitude which they conceived to be "a constellation of cognitive, affective, and conative components" - ie. a combination of how people understand, feel about, and act towards, a given object or issue (Berkowitz,1980).

In this latter definition, as with Allport's, there is an implicit assumption that there is a necessary link between attitude and action and indeed that actions are an outward manifestation of attitudes. However, the literature on attitude research is littered with evidence against a simple attitude-behaviour correlation (eg LaPiere 1939, DeFleur & Westie 1958, Tittle & Hill 1967, Wicker 1969). This is not to say that there is no causal relationship between attitudes and behaviours.

For example, evidence for such a relationship was offered by Bentler and Speckhart (1981) who reported experimental results that "unambiguosly support the proposition that attitudes have causal priority over behaviours". Moreover, such a claim is not isolated but has been reiterated by other experimental researchers (eg. Cialdini et al., 1981; Fazio and Zanna, 1981; Katz,1985;). Nevertheless, although there is now ample evidence to suggest a close relationship between attitudes and behaviours, there is nothing to indicate that attitudes must be expressed in actions, or that cognitions and actions are inherent components of attitudes. On the contrary, the evidence suggests that they are distinct entities and of particular interest in the more recent studies cited above, is the fact that a clear differentiation is made between attitudes, beliefs and actions.

The need for such a differentiation was advocated in the sixties by Martin Fishbein. He also suggested (Fishbein, 1967) that one reason for the common failure to find attitude-action correlations was lack of specificity of attitude to the action. For example knowing how someone feels about infant immunisation in general, is not an adequate measure for predicting whether or not that person will have her or his own child immunised. Knowing how they feel about *having their own child immunised*

would be a much more appropriate predictive measure to use.

Even so, attitudes may not always be translated into actions, for other extraneous variables may intercede and exert their own influence on manifested behaviour. For instance, one might hold very positive attitudes towards infant immunisation, but not have one's own child immunised for lack of opportunity. Equally, even if the opportunity is presented one might be reluctant to take advantage of it because the child has a cold or other minor illness when the opportunity for immunisation arises. Yet again, one parent may feel very postive towards immunisation whilst the other holds negative attitudes and the influence of the latter may weigh more heavily than that of the former in terms of decision-making and actions taken in this context.

According to the more complex definitions of attitude this apparent lack of 'readiness to respond' would imply that the attitude towards infant immunisation was not really very positive. However, this failure to respond in the expected way to the attitude object on this occasion, does not really justify such a conclusion, for it does not invalidate the general positive feeling that one has towards infant immunisation.

Of course, feelings cognitions and actions commonly overlap and interact, but they are independent processes. Individuals may well like or dislike an object, yet have cognitions about the object which conflict with their feelings, and they may variously behave in accordance with their affective or cognitive influences. Therefore, whilst cognitions and connations may be important correlates with, or even influences on, affect, they are distinct from it and Thurstone's simple definition of attitude would seem to be the best. Certainly it is the definition which is implicitly assumed by most models of attitude measurement which seek to assess how favourably or unfavourably particular objects or issues are regarded.

4.2 SOCIO-DEMOGRAPHIC AND ATTITUDINAL ASSOCIATES OF PARTICIPATION

In spite of the problems of determining operational definitions of attitude, and of assertions against a causal attitude-behaviour relationship, various studies have been conducted to identify attitudes and beliefs associated with non-utilisation of various screening services. Investigations have also been made of sociodemographic variables associated with screening participation and these will be considered first below.

4.2.1 Sociodemographic Correlates of Participation

In a review of psychosocial correlates of preventive health behaviours in America, Kirscht (1983) reported that people in higher socioeconomic groups are more likely than those in the lower socioeconomic groups to attend screenings for breast cancer, cervical cancer and asymptomatic check-ups such as those for cardiovascular risk. He also found that women were more likely than men to attend for asymptomatic check-ups where attendance is voluntary rather than an employment/insurance requirement. Utilisation of screening services was found to be greatest amongst middle-aged people and those with social support.

Most British studies which have explored demographic correlates of attendance at breast and cervical cancer screenings have also found attandance to be associated with higher socioeconomic groups. But, in this country, it is younger women rather than the middle-aged who are the most likely to utilise these services (eg.French et al, 1982; Lloyd, 1983; Chamberlain, 1984; Maclean et al.,1984). Interestingly, O'Brien and Hodes (1978) found no differences in terms of social class, age, marital status or education between attenders and non-attenders at a general practice screening for hypertension.

Because so little research into factors influencing participation in clinical trials has been published, there is a paucity of details of demographic correlates with the activity. However, studies of compliance with ordinary therapeutic drug regimens have found no sociodemographic variables which reliably differentiate between compliant and defaulting patients (eg. Peck, 1978; Miller et al., 1982). Rather, Porter's (1969) assertion that "every patient is a potential defaulter" seems to have been borne out.

4.2.2 Attitudinal Influences

Attitudes and beliefs identified as influencing screening participation differ between the various types of services on offer. Furthermore, reasons given for non-participation do not always tally with empirical evidence. For example, lack of time and inconvenience of clinic attendance are commonly-given reasons for non-attendance. Yet French (1982) found that, in Edinburgh, significantly more attenders than non-attenders at a breast screening clinic were working women; and for 43% of attenders working hours and clinic hours were mutually exclusive.

Furthermore, more attenders than non-attenders had other commitments on their time such as dependent children or elderly relatives. Similarly,

although cited as reasons for non-attendance, Fink et al.(1968) found lack of time and inconvenience *not* to be significant factors influencing attendence at an American breast cancer screening programme.

For both breast and cervical cancer screening the major reasons for non-attendance seem to be fear of the examination itself, and of the possible outcome of test results (Wookey,1971; French et al. 1982; Maclean et al 1984). Indeed, French found that, in general, non-attenders viewed screening clinics as places of risk, whilst attenders viewed them in a more positive light.

Of those who said they did not want check-ups in the Cartwright and Anderson (1981) study, only 12% stated that they would not want to be screened because they were nervous or afraid of outcome. Just 7% of unscreened respondents in the O'Brien and Hodes (1978) hypertension screening study, gave similar reasons for non-attendance. Rather, the main reasons given for non-attendance in both the Cartwright and O'Brien studies were that people were already under medical supervision; that they had recently had a check-up for work purposes; or that it was a waste of the doctors' time.

Differences in the reasons given for non-attendance at different types of screening are not surprising. After all, screening for both breast and cervical cancer entails rather intimate examination, and if cancer is detected the possibility of disfiguring surgery and psychological trauma is always present. Added to this, there is now the possiblity that cancer of the cervix might be perceived as being evidence of promiscuity which may further complicate attitudes to screening. Therefore, it would be imprudent to regard findings from studies of this sort as necessarily generalisable to other types screening, eg. that for cardiovascular risk.

Unfortunately, although the O'Brien and Hode's study was directed at screening for hypertension specifically, there are certain features of the study design which would make it unwise to unquestioningly accept their findings as generalisable beyond the study sample. Firstly, the study sample was drawn from a narrow band of patients (45 to 54 years old) at a single group practice, and secondly it represented a retrospective investigation of attitudes to screening.

Because the practice already offered screening for hypertension it may be assumed that the partners were committed to preventive medicine, at least in this respect, and their attitudes to screening may well have had its own influence on patients' attitudes. Also, no group practices are exactly alike and this one may have been atypical in any number of ways.

The problem with a retrospective study of this sort is that it only really tells us what people who have had a screening test feel about that test with the benefit of hindsight and experience. It does not give any real indications of what influences people in their intentions to participate in screening.

Admittedly, O'Brien and Hodes did also investigate those who declined screening, thus offering some insight into why they refused participation, so the study must be given serious attention. In addition, as well as addressing the problem of what influences non-attendance, they also explored reasons behind positive attitudes to screening.

The major reasons for thinking screening was a good idea were:
(1) can discover illness in early stages; (2) it gives peace of mind; (3) health deteriorates as people get older; (4) people would not go to the doctor otherwise; (5) prevention is better than cure.

Knowing what encourages people to participate in screening may be just as important as knowing what deters them from taking part when it comes to devising appropriate promotional campaigns.

4.3 PREDICTIVE MODELS OF PREVENTIVE HEALTH BEHAVIOUR

As discussed in section 4.1 -attitude research- above, the prediction of behaviour from attitudes has not always been very successful. However, two major predictive models have evolved as very useful tools in the prediction of preventive health behaviour. The first model, the Health Belief Model was developed specifically for application in this field. The second model, the Behavioural Intention Model was designed for more general application but has been used quite widely in the area of preventive health behaviour.

4.3.1 The Health Belief Model

The Health Belief Model (HBM) was first suggested by Rosenstock (1966) and later modified by Becker and Maiman (1975). The model was based on the work of Lewin et al.(1944) and represents a 'value-expectancy' approach which describes behaviour or decision-making when conditions of uncertainty apply. Essentially, this approach suggests that behaviour can be predicted from a combination of the individual's expectations that a particular action will result in a given outcome and her/his evaluation of that outcome.

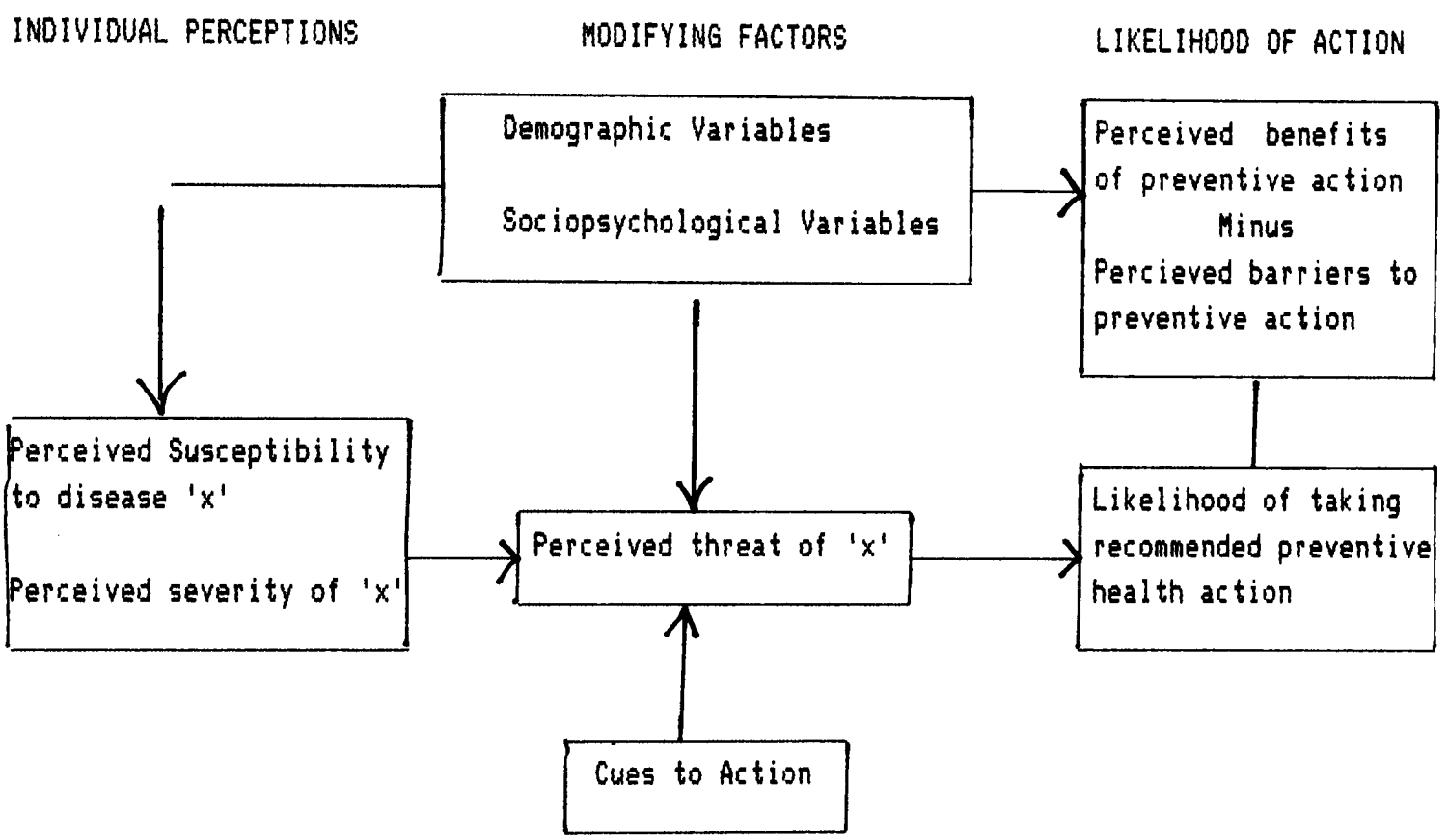
Within this framework the HMB purports to predict preventive behaviours from 4 key elements ie. (1) Motivation, (2) Percieved Vulnerability, (3) Perceived Severity, (4) Percieved Benefits and Costs. Briefly, the implications of the HBM are that, given cues to action (such as symptoms or publicity), people are most likely to engage in preventive actions or comply with medical advice if they : "(a) feel concerned about their health and 'motivated' to protect it; (b) feel susceptible to the disease in question; (c) believe that the consequences of the disease would be serious if left untreated; (d) believe in the benefits of the recommended treatment or advice, and that these outweigh the costs of following this advice (eg pain, time, side effects)' (King, 1983).

Paradoxically perhaps in the light of the evidence for patient desires for information (see section 2.2-ethical concerns), it has been suggested that often, people do not want to know about the health risks they face as such information makes them anxious. It has also been postulated that it is fear and anxiety which underlie much resistance to health warnings and medical advice. Therefore, this possible deterrent to preventive behaviour must also be considered in the cost-benefit analysis of (d) above.

Although the 4 elements outlined above are deemed to be the most influential factors in determining preventive health behaviour, Becker and Maiman also acknowledge the influence of other "modifying and enabling factors" such as sociodemographic variables, financial costs of the action, and prior experience of the action, condition or therapeutic regimen. A diagramatic representation of the HBM, is shown in figure 1 over.

Figure 1 Diagramatic Representation of the HBM

Derived from; The Original Formulation of the HBM (Becker and Maiman 1975)



The HMB has been given considerable application in the field of preventive medicine and the key variables outlined above have been shown to influence a wide range of health behaviours. These include attendance at screenings and immunisations, compliance with drug and treatment regimens, and mothers' acceptance of medical advice for their children (eg. Becker et al, 1977). It has also been applied in attempts to predict, and differentiate between causal explanations of, attenders vs non-attenders at a hypertension screening programme (King, 1982).

Regarding its predictive qualities, study results indicate that the HBM is quite effective. However, its success in identifying specific differentiating factors has been less well documented. Indeed, whilst the efficacy of the HBM has been praised by many preventive health researchers (eg. Janz and Becker 1984), it has been questioned by others (eg. Tirrell and Hart, 1980; Calnan and Rutter, 1986). Furthermore, the HBM has been criticised on the grounds that it treats beliefs, attitudes and intentions as synonymous rather than as interrelated (eg. Miller et al.

1985); and that it does not afford consistency of measurement because it is not a formal theoretical model, but rather a conglomerate of variables, each of which may be open to various interpretation (eg. Oliver and Berger 1979). Thus at present the HBM cannot be considered the definitive approach to predicting and understanding preventive health behaviours.

Also, as a cautionary note, it should be remembered that the HBM has enjoyed widest application in America where primary health care provision is very different from that found in Britain. Therefore, it may be wise to bear in mind the circumstantial differences of primary health care in the two countries, when research into primary health care is considered. Results of American research relating to this area may not transfer easily to the British situation, where both economic and cultural differences apply.

4.3.2 The Behavioural Intention Model

Like the HBM, the Behavioural Intention Model (BIM) represents a 'value-expectancy' approach to the prediction of behaviour. Unlike the HBM, the BIM represents a formal theoretical model. It is based directly on Fishbein and Ajzen's Theory of Reasoned Action which was introduced in 1967 and has been further developed since. Stated concisely, the Theory of Reasoned Action "is based on the assumption that human beings are usually quite rational and make systematic use of the information available to them."(Ajzen and Fishbein 1980) It proposes that humans actions are not performed 'willy nilly', or as the result of unconscious motives,but rather that they are the outcome of thoughtful considerations of the implications of such action.

The precepts of the theory are reflected in the BIM which states that a given behaviour is a function of intention to perform that behaviour. Intention, in turn, is stated to be determined by a combination of attitudes towards the behaviour, subjective norms, and motivation to comply with normative influences.

In other words, in the first instance, a person may be expected to perform a given behaviour if (s)he intends to do so. Likewise, intention to perform an action may be assumed if a person feels favourably towards performing the action, believes it to be well thought of by her important others and is motivated to comply with their wishes or opinions.

This part of the model has been symbolically summarised as follows: -

$$B \sim I \propto [\, w_1 A_B + w_2 SN \,]$$

Where B = the behaviour of interest; I = intention to perform B; A_B = attitude towards performing B; SN = subjective norm concerning B; and w_1 and w_2 are empirically determined weighting parameters that reflect the relative importance of A_B and SN (Ajzen, 1985).

A further premise of the BIM is that causal explanations of attitudes may be effected by examination of the salient beliefs which underly the attitudes. The equation that expresses this aspect of the model is:-

$$A_B \propto \sum_{i=1}^{n} b_i e_i$$

Where A_B=attitude to the behaviour; b_i=the belief(subjective probability) that performing B will lead to outcome i; e_i= the evaluation of outcome i and the sum is over the n salient behavioural beliefs.

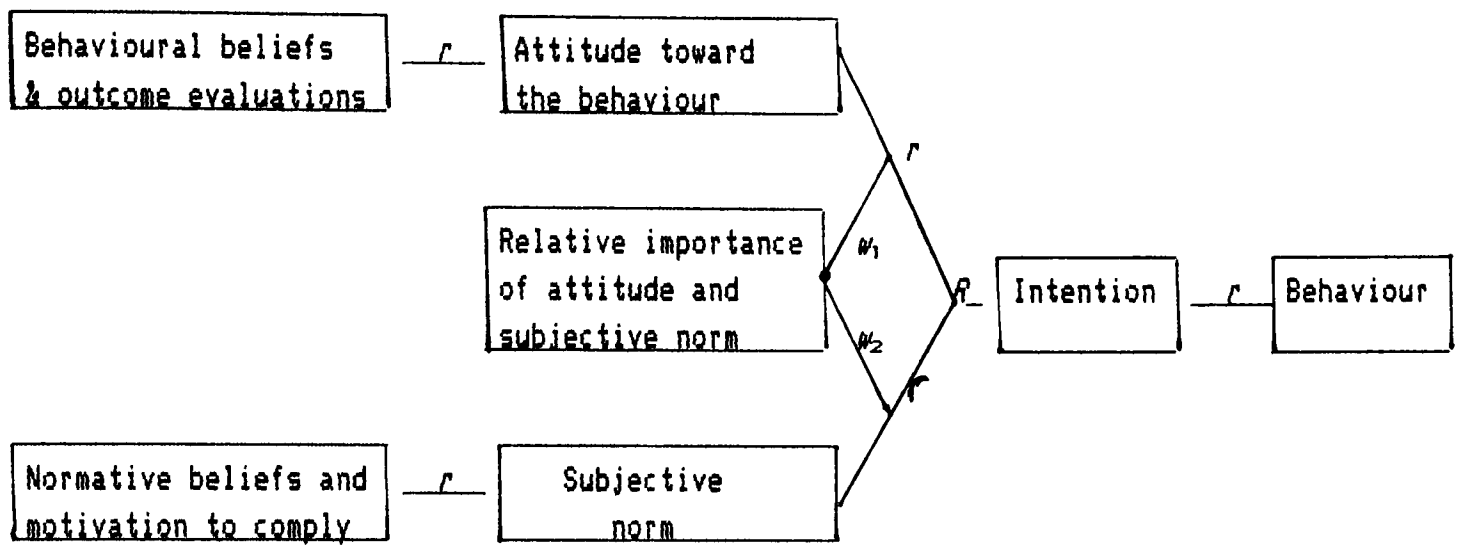
Subjective norms can be similarly understood by examining normative beliefs and motivations to comply with specified referents:-

$$SN \propto \sum_{j=1}^{n} b_j m_j$$

Where SN = subjective norm; b_j = the normative belief concerning referent j; m_j = the person's motivation to comply with referent j; and n = the number of salient normative beliefs.

Fishbein and Ajzen concede that their model is not an infallible tool for predicting behaviour. Rather, it is acknowledged that extraneous variables may intercede to prevent intentions from being transformed into actions. However, according to the Theory of Reasoned Action, there is no room for a direct influence of sociodemographic variables in the predictive model, since it is argued that if such variables are associated with a given behaviour, it will be only by virtue of the fact that they have had an influence on, or are associated with, the underlying attitudinal and normative determinants. Therefore, unlike the HBM, socio-demographic variables do not appear in the BIM. A diagramatic representation of the basic BIM is given in figure 2 over.

Figure 2 Representation of the Behavioural Intention Model Showing The Relations Among Beliefs, Attitude, Subjective Norm, Intention and Behaviour (taken from Ajzen and Fishbein, 1980 p.100)



Within the field of health behaviours, the BIM has had several applications. These include studies for the prediction and understanding of:- family planning behaviours (eg.Jaccard and Davidson,1972); mothers' infant feeding intentions and behaviours (Manstead et al, 1983); and post myocardial infarction regimen adherence (Miller et al 1985). Results from these studies, and from other applications, indicate that the predictive quality of the BIM is at least equal to that of the HBM, whilst the degree of attitudinal understanding it affords is superior.

However, although both the HBM and BIM offer valuable frameworks for the prediction of preventive health care utilisation, neither model really fulfils Leavitt's (1979) asserted criteria for such prediction. For example, a potentially important aspect of 'motivational' variables is that of normative beliefs which do not feature in the HBM. Equally, social, economic and demographic variables are omitted from the BIM. This omission precludes identification of specific sub-groups who may be particularly enthusiatic, or reluctant, to use preventive services.

Fishbein and Ajzen may well be right in their assertions that socio-demographic variables exert only an indirect influence on behaviour via a possible influence on belief systems. But if such an influence exists it would seem important to identify groups who share common beliefs if appropriate campaigns are to be effectively targeted.

Therefore, just as it was conluded that the HBM does not offer a definitive approach to predicting preventive health behaviours, so too is it apparent that the BIM has room for improvement.

5. ISSUES OF SPECIFIC IMPORTANCE TO THE THESIS

As stated in section 1 - general introduction - the primary purpose of the reported research was to assess public attitudes to preventive medicine, with the particular focus of cardiovascular risk-reduction. Both studies comprising the thesis research were associated with the Health Maintenance Study (HMS), thus issues that are of specific importance to the thesis include some of those which are also of special interest to the HMS. In addition, the second study utilised the Behavioural Intention Model (BIM) and a secondary objective of the research was to test the (BIM) for the prediction and understanding of screening and clinical trial participation intentions. Therefore, issues relating to the BIM are also of special relevance to the thesis.

Basically, in terms of its primary purpose, the research was intended to address three broad questions: ie. (1) what do people feel about preventive medicine? (2) what do they feel about general practitioner involvement with research? (3) what do they feel about actually taking part in screening programmes and clinical trials for cardiovascular risk-reduction; and what are the factors that influence their decisions in this area?

It was felt necessary to explore these areas because they have important implications for the success or failure of preventive projects and current knowledge in this area is inadequate. Problems of participant recruitment and of potential barriers to participation in both screening and clinical trials were considered in sections 2 and 3.5 respectively. Various potentially influential factors were discussed, but the major conclusion was that public attitudes and beliefs represent a very important factor in preventive health care utilisation and in effective clinical trial recruitment.

Thus it would seem expedient for designers and promotors of preventive medicine research to be aware, and take account of, public attitudes towards screening and clinical trials in the planning and recruitment phases of their studies. However, partly because of lack of information in this area, such considerations do not appear to be commonplace, with the consequence that preventive programmes remain under-utilised and the effective participation of clinical trial entrants, uncertain.

Researchers involved in the (HMS) were anxious to maximise effective participation. Therefore, they were keen to obtain information which could be considered in the formulation of recruitment plans and research protocols to enhance the attractiveness of participation in the eyes of the target population. They also wanted some indication of how popular

the concept of preventive medicine was, and how people felt about GP involvement with research. This was especially so in relation to clinical trial participation where so very little is yet known. It was with this objective in mind that the first study of the thesis research was designed. More detailed discussion of HMS specifications will therefore be presented in Part II in the specific introduction to the preliminary study.

In respect of the secondary research objective, the main issue of importance was considered to be whether the BIM was a useful tool to employ in this type of research, and if so, which of the variations of it afforded the best predictions and understanding. Because there is already a considerable body of evidence to indicate that it is effective for prediction and understanding of behavioural intentions (see section 4.3.2), further testing of its utility may seem unnecessary. However, use of the BIM does entail employment of a rather repetitive instrument. Apart from studies of voting intention, it seems to have received relatively little testing in general population samples and even less in postal surveys.

Rather, it seems that most published studies of BIM employment have been applied to special groups of people. Furthermore, canvassing of study participants has usually been in the form of a personal approach, and often the questionnaire instrument has been interviewer-administered, or self-administered in the presence of a researcher. Personal recruitment of study participants and interviewer-administration of questionnaires is a costly practice which may impose quite severe restrictions on the size and range of a study sample. Also, whilst personal involvement of researchers may enhance survey response rates (eg. Bellizzi and Hite,1986), it also poses potential problems of 'experimenter effects' due to interviewer-respondent interactions.

Because of its somewhat complex nature, the BIM was not employed in the initial exploration of the area where the main objective was to identify the range of variables associated with participation in screening and clinical trials.. However, in spite of its possible drawbacks, it did seem to offer the best approach for gaining real understanding of participatory influences. Therefore, it was decided to use the model in the second study where the power of associated variables was to be assessed. The general utility of the BIM would also be investigated by an assessment of its acceptance by a sample of the general public recruited via mail-shot canvassing. More detailed consideration of the BIM and the Theory of Reasoned Action from which it was derived, will be given in the specific introduction to the second study.

An issue of special importance to both studies was that of anonymity. In most reported studies of medical interest, questionnaire response rates are considerably higher than those attained for many non-medical questionnaire studies. This is perhaps especially true of studies that are associated with respondents' own GPs (eg. Smith et al 1984). The general superiority of medical response rates may be due to a special public interest in medical matters, exceptionally well designed canvassing approaches and questionnaires, or perhaps, the survey methodology.

During the literature-review process of the thesis, reports of many medical survey studies were read and considered. A striking finding was that none of these papers reported anonymous questionnaire completion and most gave details of repeated, and quite extensive, follow-up procedures. The possibility of such methodological approaches inducing a feeling of coercion to respond, and the possible association of such feelings with biased responses, was discussed in section 2.4. Therefore, it was considered important in the reported research to ensure total anonymity of respondents and to compare consequent response rates from GP endorsed and non-medical sampling sources.

6 AN OVERVIEW OF METHODOLOGICAL CONSIDERATIONS

Given that the objective of the research was to assess current public attitudes, it was evident that survey studies would be required. However, it was also evident that if the survey results were to be of any real value, they must be obtained within research designs that were methodologically sound. As mentioned in section 5 above, the two studies comprising the research were designed for different priorites. Therefore each demanded its own methodological considerations. Nevertheless, the two studies were similar in many respects and whilst considerations peculiar to each study will be given in the appropriate specific study introductions, an overview of methodological concerns common to both will be presented below.

6.1 CONSIDERATIONS OF RESEARCH APPROACH

The most basic consideration was that of which definition of an attitude would be adopted to govern the format of the surveys. Problems associated with attitude definition have already been discussed in section 4.1 where the prefered definition was stated to be that given by Thurstone.

To recap, this definition holds that an attitude is an evaluation or feeling reaction so that a person's attitude towards an object or issue represents the favourableness or unfavourableness (s)he feels towards it. It represented the simplest conception of an attitude, the one that was most intuitively apt, and the one which accorded most closely with the methods employed in the majority of attitude measurements. Moreover, it is the definition employed in the Behavioural Intention Model to be used in the second study, so it was considered highly appropriate to maintain consistency by adopting this definition for the preliminary investigation.

Having determined the guiding attitude definition, consideration was given to the most appropriate type of survey to pursue. "A survey is a form of planned collection of data for the purpose of description or prediction as a guide to action or for the purpose of analysing the relationship between certain variables" (Oppenheim 1966). Basically, a survey is a special way of asking questions. They can be asked orally, as in in-depth interviews and interviewer-administered questionnaires; or they can be asked in writing via self-completion questionnaires. These question-asking techniques are usually used for slightly different purposes, and each may be more appropriate for different subject matters, but they are not mutually exclusive. Indeed, they are often used in concert, or with the results of interviews being used in the formulation of questionnaires.

In-depth interviews may be structured or unstructured and the main benefits of in-depth interviews are that they can be more flexible than questionnaires, enable informants to give responses to questions in their own words using as many or few as are desired, can be adjusted to situations, and allow for increased rapport and co-operation between informant and interviewer. In addition they afford the opportunity for deep probing of responses so that individuals are not restricted to a limited choice of preconceived responses and attitudes can be thoroughly investigated. They also provide excellent opportunities for knowledge-testing and obtaining spontaneous responses.

Because of this, in-depth interviews can offer an excellent method for obtaining detailed and comprehensive information provided that: the

subject matter is not too sensitive or likely to cause embarassment to the respondent; the quality of the questions asked is good; and the interviewer is well trained in this art.

Another major benefit of the in-depth interview approach is that once a sample has been secured, the researcher can be confident that (s)he will come away from the interview with some reaction to each of the items. Even if an informant declines to answer the question, the researcher will know that the missing data is due to a deliberate refusal to supply information and not just an oversight. More importantly, the interviewer will be able to note the reactions, both verbal and non-verbal, of the informant to the item. It can also be ensured that the responses obtained are those of a particular informant. Finally, there is the opportunity for a continuous assessment of the sample profile so adjustments in recruitment can be made to ensure that the sample represents the target population.

Against this, recruitment of in-depth interview respondents may be rather difficult. For example, in order to canvass participation from an adequate sample, a suitable sampling source must be obtained, and this may be easier planned than achieved. Even when it is achieved, volunteer bias may be particularly pronounced in an in-depth interview sample since the technique demands considerable participant investment in terms of time and face to face exposure of one's feelings to a stranger.

Apart from these problems, our current social climate seems to be engendering a suspiciousness that may discourage people from admitting strangers into their homes. Some evidence for a growing reluctance of people to agree to home-based interviews was offered by the Institute for Social Research (1976). So even if an interview is granted, people may feel a little ill at ease with the situation and give less than total concentration to the actual interview.

Other drawbacks of in-depth interviews are that they demand a lot of research time, may suffer lack of control and consequently reliability, and are quite vulnerable to artefactual effects due to respondent-interviewer interactions. Also, because the results obtained from in-depth interviews are qualitative rather than quantitative, statistical analysis is not really appropriate and probabilistic answers to questions cannot be adequately obtained.

Questionnaires may be interviewer administered or self-completed and the level of respondent-interviewer interaction may be considerable, as in the first instance, or almost negligable in the latter instance if the

questionnaire has been sent to potential respondents through the post without prior contact with the researcher. It may also be of an intermediate level if a self-completion method is used but co-operation is first secured through a personal approach by the researcher.

Interviewer-administered questionnaires serve as an intermediary between in-depth interviews and self-completion instruments. They can provide the same type of uniform, easily codeable, quantitative data obtained from self completion questionnaires; whilst retaining the benefits of rapport establishment and guaranteed returns afforded by the in-depth interview.

However, they are almost as costly in personnel time and possible interviewer effects as in-depth interviews; and may be as tightly constrained as self-completion instruments. There is often a very good case for using interviewer-administered questionnaires - especially in the pilot stages of a self-completion survey - but, since they also carry many of the disadvantages of both methods, without the total advantages of either, they should be used with caution.

What the self-completion questionnaire may lose in reduced flexibility compared to the in-depth interview, it stands to gain in reduced 'interviewer effects' on responses, and thus it is similarly less prone to, though not exempt from, reliability problems and 'socially desirable' answers. Another advantage of questionnaires is that a variety of answer options may be afforded in such a way that a wide range of attitudes towards a particular object or issue may all be presented as acceptable ones for individual respondents to adopt. Of course, the possibility of leading questions occuring is not removed and careful wording of items is essential if the problem is to be avoided.

The development of a good self-completion questionnaire may take considerably longer than the devising of an in-depth interview schedule. But, per respondent, self-completion instuments are far less demanding of researcher time than are in-depth interviews. Consequently, in most instances many more respondents may be obtained using this method than would be possible if just interviews, or interviewer-administerd questionnaires were employed. Futhermore, if self-completion instruments are distributed by post, the geographical range, as well as the size of the sample, may be considerably greater than that achievable by the other methods.

A particular benefit of self-completion questionnaires over in-depth interviews is that the former do not require intrusion by a researcher into the respondents' homes. Thus, not only do they avoid security

problems associated with letting a stranger into one's home; but they also allows the informant to answer the questions in his or her own time and afford the *opportunity* for total privacy of completion. Even with a self-completion instrument, informants may be unable to complete the questionnaire in the absence of other family members, but at least the possibility of private completion is enhanced.

However, the use of self-completion questionnaires is not without problems, especially in the area of response rates. Response rates to self-completion questionnaires vary enormously (eg. Heberlein and Baumgartner, 1978), although quite low response rates are common, particularly for postal surveys. Much research has been undertaken in attempts to identify factors which influence response rates to postal questionnaires, but little in the way of conclusive evidence has yet emerged. People have looked at questionnaire length, sponsoring organisation, colour of paper used, 1st vs 2nd class postage, stamped vs franked envelopes, personalised vs impersonal letter openings, use of incentives, follow-ups etc.

The outcome of such works seems to have been the accumulation of a mass of contradictory evidence, since for almost every study that shows the influence of a particular factor in one population sample, another study will show no such influence on its study sample. Perhaps the most common piece of advice given to questionnaire designers is to keep the instrument as short as possible. However, in their analysis of the published literature on mailed questionnaire response rates, Heberlein and Baumgartner(1978) offered a case for long questionnaires. They proposed that a well designed long questionnaire might elicit higher response rates than a less well designed shorter instrument, as it may be easier to complete and increase the psychological costs of not responding.

As they put it: "Tossing out a one-page questionnaire may be relatively easy to do, but discarding 30 pages of questions is depriving the investigator of a good deal of information. Also, if the researcher has taken the time to compose 30 pages of questions, it is clear that this research is a matter of importance and not merely a passing curiosity."

Other work in this area that has investigated the effects of individual questions, indicates that the inclusion of items relating to education and income may decrease response rates (eg. Kaplan and Cole, 1970; Singer, 1984). However, it is also generally acknowledged that the characteristics of the target population are more important than any aspects of the instrument in determining this issue.

Whilst potentially low response rates are a major disadvantage of self-completion questionnaire surveys, they do not necessarily invalidate the use of the technique. After all, it is the representativness of a sample that is of paramount importance not really the overall size of the sample. For example, a response rate of 30% *may be* completely representative of the target population, yet a response rate of 85% may be very biased if the non-responding 15% happen to represent an entire sub-group of that population.

Unfortunately, although potentially low response rates may not necessarily discredit the use of self-completion questionnaires, they are not the only disadvantages this technique holds. Other drawbacks to self-completion questionnaires which are not answered in the presence of a researcher, include the preclusion of opportunities to: probe respondents or clarify any items they do not fully understand; ask knowledge-testing questions or questions requiring spontaneous responses; ask complex questions.

In addition, unlike the interview situation, there is no observational data to supplement written responses, nor is there any researcher control over the order in which questionnaire items are read or answered. Thus items on the instrument cannot be treated as independent. Similarly, the researcher cannot be confident that all items will receive responses, and the actual identity of the respondent must always carry some doubt. The person who actually completes the questionnaire may not be the one to whom it was addressed or given.

Nevertheless, use of self-completion questionnaires is widespread and the technique can be extremely valuable for situations in which required data can be obtained from simple 'tick-in-the-box' answers to straightforward questions. However, the benefits of questionnaires can only apply if the questionnaire used is of good quality and has been well designed and tested as a suitable instrument for the collection of data for its stated purpose.

To summarise, in-depth interviews offer an ideal method for gaining attitudinal information unconstrained by the limitation of rigid questions and predetermined answer options. But, they are costly in terms of resources and impose severe limitations on analysis of data. Use of in-depth interviews are possibly best suited to research for which resource allowances are generous or required sample sizes small.

However, in the absence of such resources, and when more generalisable knowledge is desired, a well constructed questionnaire is often a more

viable alternative, (pehaps especially so if the construction is based upon information gained from preliminary in-depth interviews). In the light of what has already been said about the need for generalisability of data (sections 2.1 & 2.3), it was clear that samples for both the reported studies would need to be both fairly large and heterogeneous. Thus it was indicated that a questionnaire would be the most appropriate choice of survey tool. On the other hand, the lack of previous work in the area also indicated the need for some preliminary deep probing of attitudes so that attitude items on the questionnaire would be appropriate.

Therefore, a self-completion questionnaire was selected as the preferred mode of data collection for both studies, although the instruments would be developed from preliminary in-depth interviews. In this way it was hoped that the attitudes investigated would be salient to the study objectives; and that the widest possible sample could be reached given the constraints of time and resources that applied. This method also afforded the collection of data which would lend itself to fairly easy coding, initial assessment and subsequent statistical testing.

6.2 SAMPLING CONSIDERATIONS

It has already been stated elsewhere in this introduction (sections 2.4 & 5) that current evidence indicates a superiority of response rates to surveys of medical interest when the survey is endorsed by the potential respondent's GP. Although it was also argued above that high response rates need not necessarily yield better results than lower ones, it is generally accepted that high response rates decrease the chance of sample bias and as such are to be prefered. However, another issue that has received previous consideration (section 2.4) is that of a possible association between GP endorsement of studies and some feelings of coercion to respond.

Therefore, when determining the sampling sources for the reported research, consideration had to be made of whether or not medical sampling sources should be used.

On the one hand, use of practice lists is a well established, valuable sampling source for surveys of medical interest. These lists offer fairly large sampling pools, and most include people of all age-groups and of a good socio-economic mix. Even where a practice serves a fairly homogeneous population, a counter for this may be found in another

practice with a different preponderance, and sampling from each can yield a general mix. (Because each general practice is a peculiar entity and can be atypical in so many ways, it is generally advisable to sample from several practices unless results are to be restricted to a single practice application.) In addition, most general practices keep up-to-date age-sex registers, thus enabling particular age-sex distributions to be selected for sampling.

On the other hand, potential respondents have a right to know the sampling source from which they were drawn. If the source happens to be a practice list, they also have the right to a covering letter from their GP to verify his or her knowledge of this and to reassure the person of medical confidentiality. However, even with clear disclaimers of GP involvement with the research, it might appear to the recipient that the GP is privy to responses, with consequent implications of perceived coercion.

So, the dilemma was whether to opt for a medical sampling source to benefit from its sampling properties and associated high response rates; or to shun such sources because of possible ethical and methodological contamination. After careful consideration of advantages and disadantages, it was finally decided to use a combination of medical and non-medical sampling sources. Identical questionnaire instruments would be used for both sampling sources and anonymity of respondents was to be an important feature of questionnaire design.

Where medical sources were to be used, it was determined that all canvassing corresspondence should stress the non-involvement of the GP with the study, and reiterate respondent anonymity. By the adoption of such as approach it was hoped that the benefits of high responses rates might be retained whilst the drawbacks of the implications of respondent identity might be dispensed with. It would also enable an assessment of the relative merits of medical and non-medical sampling sources.

7. OVER-ALL RESEARCH AIMS AND OBJECTIVES

The primary aim of the research was to identify attitudinal factors which influence participation in screening and clinical trials for cardiovascular risk reduction. It was particularly intended to identify specific deterrents to participation, or aspects which gave cause for general concern; and/or any sub-groups who might be reluctant to participate in such activities.

The objective of such identification was to assist health promotion and clinical research personnel in the development of appropriate recruitment campaigns which could, if necessary, be designed for the attention of a particular target population.

In the pursuance of this aim, two studies were undertaken. The first was a preliminary exploration of the area to identify the range of variables associated with such activities; whilst the second was designed to establish the power of associated factors. A secondary objective was to test the effectiveness of the Behavioural Intention Model (BIM) as an effective tool for the latter purpose. In addition, a by-product of both studies was to be an evaluation of medical vs non-medical sampling sources.

Specific study aims and objectives will be detailed in the individual introductions to each study, but the broad overall aims of the research were:

(1) To assess public feeling towards preventive medicine, especially as it relates to cardiovascular disease (CVD)

(2) To assess public feeling towards GP involvement with clinical research, especially as it relates to clinical trials of drugs

(3) To assess behavioural intention regarding participation in screening and clinical trial research

(4) To identify any factors influencing participation in screening or clinical trials

(5) To identify any 'reluctant to participate' sub-groups within the sample

(6) To assess the effectiveness of the BIM for the prediction and understanding participatory intention; and to assess the feasibility of employing the BIM in postal surveys of a general public sample

(7) To evaluate the merits of medical vs non-medical sampling sources.

PART II

A PRELIMINARY EXPLORATION OF FACTORS ASSOCIATED WITH PARTICIPATION IN SCREENING AND CLINICAL TRIALS

CHAPTER 1

INTRODUCTION TO THE FIRST STUDY

It has already been declared that the first study was directly associated with the Health Maintenance Study (HMS), an outline of which was presented in Part I, section 3.4. When this association began, the HMS was in its pre-pilot phase and the research director, who is also a GP, was anxious to understand more about public feeling towards projects such as the HMS.

Information was required regarding: whether or not there was a general feeling of favourability towards preventive projects run by GPs; whether there was much interest in cardiovascular risk-reduction; how people felt about GP involvement with clinical trials of drugs; and what sort of worries people associated with taking part in screening and clinical trials. Some indication of the sort of take-up rate the project could expect to attract was also required. The reasons behind his desire for this information were two-fold.

Firstly, it was hoped that such knowledge would assist in the recruitment of GPs to the study. For instance, if, as was suspected, it was found that public attitudes to preventive projects were generally popular, it might be useful to acquaint GPs with this finding when their participation in the HMS was sought. On the other hand, as was mentioned in section 2.2 (ethical concerns), within the profession there is some controversy as to the appropriateness of GP involvement in clinical trials, and minimal knowldege of public feelings towards this issue. Therefore, GPs might be interested to know study findings in this area.

Secondly, if common worries associated with screening or clinical trials could be identified, they could be taken into account and addressed when public recruitment practices and study protocols were designed.

The target population of the HMS at that stage, was people over 60 years of age. However, whilst the over-60s were to be well represented in the study sample, it would not be comprised entirely of older people. A wider population was selected so that the results of the study could aspire to greater generality and greater utility, and so that the opportunity for comparisons amongst various subgroups within the population might be afforded. Also, it was considered to be a valuable exercise to assess both older and younger people's feelings towards the concept of offering preventive health services to the elderly.

The specific information required, related to particular aspects of project participation. Questions included: How do people feel about the possibility that screening would reveal the presence of potentially lethal disease?; would they want to know if they were at risk of a heart attack or stroke?; how do people feel about the imposition of life-stlye changes, and would they feel able,or willing, to undergo revision of dietry and smoking habits?; are people worried about the side effects of pills and the prospect of taking them for a long time?; do blood pressure tests and blood samples frighten people?; what do people feel about giving lots of personal, and potentially sensitive information on questionnaires, and how do they feel about having to complete a long questionnaire prior to a health examination?.

This last concern was of special importance because the initial HMS screening programme included the completion of a long questionnaire booklet in which much personal information, some of a potentially sensitive nature, was required.

These issues formed the basis of the study to be reported here, although one other issue related to cardiovascular disease was also touched upon. The additional aspect related to public attitudes towards the influence of psychological factors on both the genesis, and treatment of essential hypertension. The importance of psychological influences in the aetiology and management of essential hypertension, is rapidly becoming more widely recognised within both the psychological and medical professions (see again sections 3.2 & 3.3). Thus attitudes towards this area were considered to be worthy of at least some preliminary exploration .

A discussion of methodological considerations was undertaken in section 6 where it was concluded that a self-completion questionnaire, developed from preliminary in-depth interview results, would be the method of data collection employed. A commitment to the Thurstone definition of attitude was also affirmed. In fact, some of the items to be included on the questionnaire would perhaps be better defined as beliefs or opinions than attitudes; but in the first study a strict differentiation between the two concepts was not observed and all items were to be assessed evaluatively on a simple 5 point Lickert-type scale.

A survey based solely on the Thurstone approach could not be expected to offer accurate predictions of behaviour from attitudes expressed, as was made evident in section 4.3. However, when attitudes and behaviours are important, as it is expected that they are when they relate to people's health and well-being, simple attitude measurement can predict future conduct at least moderately well (Schuman and Johnson 1976). Furthermore, even if no prediction of participation rates from attitudes may be made,

knowledge of attitudes towards medical research projects is valuable in its own right, as is the identification of their potentially deterrent aspects. However, if appropriate attitudes were to be assessed, salient factors had to be ascertained, and it was hoped that preliminary in-depth interview results would provide the necessary information.

Because of the importance of interview results to the subsequent study, the selection of appropriate informants was essential. 'Appropriate' informants would be those who were willing to openly voice their feelings about the issues under discussion, and those who would be representative of the HMS target population. Therefore, all interview informants were to be over 60 years of age, with some being known to have a history of cardiovascular disease. It was also felt that small-group interviews would encourage greater discussion of attitudes towards various aspects of screening programmes and clinical trials, than would individual interviews. Thus it was necessary to devise appropriate recruitment approaches, if the desired sample of interview informants was to be achieved.

Two approaches were determined. One method entailed direct approaches by the researcher, the other entailed an initial approach by a GP. (the recruiting GP was in fact also the director of the HMS). Costs and benefits were attached to both GP- and researcher-recruitment of informants. This was especially so given that the required sample was to consist of elderly people. However, it was hoped that employment of both methods would enable the benefits to be retained, whilst costs could be set off against each other.

The use of GP-recruited informants had the benefits of:-

(1) Ensuring that some informants would be eligible for trial entry;

(2) Enabling group discussions to take place in known, comfortable surroundings;

(3) Dispelling informants' worries about the authenticity of the researcher, and about letting a stranger into their homes.

The possible drawbacks of GP recruitment of informants were: ethical concerns that recruits may feel unable to refuse if asked to take part by their doctor; and methodological concerns of (a) positive bias in attitudes due to GP bias in selection; or (b) insincere responses by informants, for whom fear of upsetting the doctor, rather than a genuine interest in the topic, represented the major motivation for participation.

These ethical and methodological costs could be largely offset by the additional use of researcher-recruited informants. But, this method would

not offer benefits (1)(2) or(3) afforded by the other approach, nor would it necessarily eliminate selection bias. However, problems of GP-recruitment of informants could also be alleviated by a very low level of GP involvement in recruitment, and reassurances that he would not know who did or didn't decide to take part. The GP's rôle in recruitment would be merely that of making initial inquiries as to patients' interest in taking part in the interviews, and the transmission of contact details of potential informants to the researcher. Subsequent interviewee recruitment would then be the researcher's job.

In section 2.4 the issue of anonymity was considered and its advantages and disadvantages discussed. On balance, it was decided that in the main study, respondent anonymity would be preferable to identifiable respondents even though such an approach would preclude follow-ups.

Finally, in order to secure the required proportion of elderly repondents, it was decide that distribution would be effected by personal approach at various sites, including GP waiting rooms. Use of waiting rooms would confer some degree of GP endorsement, thus allowing comparison of 'medical' and 'non-medical' respondents. It would also, hopefully, increase response rates.

The main aims of the study were:

(1) To determine whether people were generally in favour or against screening programmes for CVD; and if they would be likely to become participants.

(2) To assess whether people were generally in favour or against clinical trials being undertaken by GPs and, again, whether or not they would be likely to become trial entrants.

(3) To determine public attitudes towards the application of preventive medicine for elderly people.

(4) To identify any particular aspects of screening programmes and clinical trials which were causes of worry and potential deterrents to participation.

(5) To identify characteristics of any sub-groups within the sample which might represent reluctant participants.

(6) To assess whether or not people felt that the use of psychological techniques were a useful adjunct to drug therapies in the treatment of hypertension.

CHAPTER 2

METHOD

SUMMARY

A series of semi-stuctured depth interviews were conducted to investigate public opinion of preventive medicine and associated clinical trials carried out by General Practioners. Because information obtained from the in-depth interviews was to form the basis of the attitude section of the questionnaire; and because the questionnaire was to be of special relevance to the HMS, all interview informants were over 60 years of age. Thus information was obtained from representatives of the HMS target population. The information obtained related to the general concept of preventive medicine and to specific aspects of it, especially those which might give cause for concern, or about which people might hold some reservations.

On the basis of these depth interviews, a self-completion questionnaire was designed for wider distribution to ascertain the generality of these reported attitudes.

Distribution of questionnaires was effected via personal approach from several distribution points in the Milton Keynes area. These included two general practice waiting rooms. 686 questionnaires, each of which was attached to a freepost return envelope, were accepted and 442 returns were obtained in time for analysis.

Completed questionnaires were coded for computer analysis and statistical tests were performed on the data. Qualitative data, such as the comments which people made on the back of their questionnaires,was also given consideration when the results were interpreted and discussed.

1. IN-DEPTH INTERVIEWS

Because no questionnaire appropriate to the objectives of this survey has been published, the development of a new purpose-designed questionnaire was necessary. Two main requirements underpinned this development: the need for an effective research tool suitable for the reliable collection of attitudinal data; and the need for this instrument to be easily utilised by respondents, many of them elderly, in self-completion situations. A series of in-depth interviews formed the basis of questions used in the questionnaire which was modified in the light of pilot studies.

1.1 INTERVIEW INFORMANTS

Eleven people (6 women and 5 men) participated in semi-structured in-depth interviews. 4 were interviewed individually and two group interviews, of 4 and 3 people respectively, were also conducted. In order to obtain attitudinal information from people who were representative of the HMS target population, all interviewees were over 60 years of age. Some informants would be eligible for entry into the HMS clinical trials because of a known history of cardiovascular disease; others just by virtue of their age.

Individual interviewees were all known personally by the researcher and were interviewed in their own surroundings. No-one approached refused to participate.

Group-interview participants were initially recruited by their GP who asked suitable patients if they would be interested in taking part in discussions about preventive medicine and clinical trials run in general practice. Those who agreed were telephoned by the researcher who introduced herself, explained her connection to the doctor, and asked if they were still interested in taking part in small group interviews. Potential informants were reassuranced that they should not feel obliged to take part, if they did not really want to.

Two potential informants did refuse to participate in the interviews, saying that they had changed their minds since talking to the doctor. A third potential informant declined on the grounds that the interview times clashed with her part-time job hours; and a fourth failed to attend her appointed interview session. However, all other people approached in this way, expressed a keen interest in the project, and, in having the

opportunity to voice their opinions on the matter. Both group-interview sessions were conducted in a private room at the doctor's surgery.

1.2 INTERVIEW PROCEDURES

Group interview participants were greeted in the reception area and taken through to a private room in the practice. No names were subsequently used, and reassurance was given of anonymity and confidentiality. At the start of each interview session informants were offered refreshements which helped to create an informal, convivial atmosphere in which to procede. Similarly, the interviewer was offered, and accepted, refreshments by informants who participated in individual interview sessions in their homes.

At the begining of each interview situation, permission was sought to tape-record the interview so that subsequent transcripts of the tapes could be made. This permission was readily given on all occasions. Again informants were reassured that no-one but the researcher would hear the tapes and it was promised that the recording would be erased once transcripts had been made. The same general outline of the HMS and explanation of the purpose of the interviews was given at each session (see appendix 1).

Before interviews began informants were reminded that there were no right or wrong answers to any of the questions asked, but rather that it was essential that the researcher discover what people really felt about the various issues to be discussed. The same aspects of preventive medicine and clinical trials were discussed in all sessions and were always approached in the same order (see appendix 2). The topics raised by the researcher related to how people felt about preventive medicine for cardiovascular diseases - especially for the older age groups; and to what aspects of this type of preventive medicine might worry them or make them disinclined to participate in such a project. The topics included:

the general concept of preventive medicine for cardiovascular diseases;
lifestyle changes;
medical tests such as blood pressure and blood samples;
regular health check-ups;
questionnaire completion;
worries associated with taking drugs, especially long-term;
worries associated with not knowing whether one was in a placebo or active drug condition;
worries about the discovery of health problems;

the use of psychological as well as pharmaceutical treatment techniques. (see elaboration of prompt cards appendix 2).

At the end of each session informants were once more thanked for their time and co-operation, and after transcripts of the tapes had been made the interviews were erased from the tape in accordance with the pre-interview promise of the researcher. Data from these interviews was subsequently analysed and utilised in the formulation of the questionnaire.

2. DEVELOPMENT OF THE QUESTIONNAIRE

The primary purpose of the questionnaire was that of an exploratory instrument. However, whilst it was not specifically intended to test a predictive model, it was evident that interview elicitation of beliefs had provided most of the variables necessary for application of the Health Belief Model (HBM), which does not depend upon a strictly prescribed format. As Rees (1985) pointed out, whilst some standardised versions of HBM questionnaires have been devised for applications in particular areas (eg. treatment compliance), "operational definitions of model items are almost as numerous as the studies published.."; and the general recommendation is for authors to devise their own measures.

One important variable in the HBM that was not available for measurement in the study instrument was that of perceived severity of the disease in question. However, other researchers (eg. Calnan and Rutter, 1986) have argued that inclusion of this item is not necessary when the disease is clearly established as one with severe consequences. They therefore omitted the item in their study relating to breast cancer, and it is proposed that its inclusion would be equally unnecessary in the reported study relating to heart attacks and strokes.

Thus, although the questionnaire was not designed especially for HBM application, it was possible to develop the instrument in such a way as to enable a tentative application of the model to be made.

Since the objective of the study was an investigation of attitudes and beliefs; such items, measured by Likert-type scales, comprised the major part of the questionnaire. However, because other information was required if comparisons of sub-groups were to be made, another small section was included to collect data relating to sociodemographic details; current health status; health history; and health consciousness of respondents.

In order for the attitude items used on the questionnaire to reflect attitudes expressed by interview respondents, the interview tapes and transcripts were scrutinized for common, and/or strongly expressed attitudes. They were also examined for evidence of aspects of particular concern to informants, especially as they related to the factors outlined above (some examples of interview statements are given in appendix 3).

Statements were selected from the in-depth interview responses to represent attitudes and concerns relating to the various topics covered, and response options provided were: Strongly Agree; Agree; Uncertain; Disagree; Strongly Disagree.

Unfortunately, it was not possible to include all the topics discussed in the in-depth interviews in the questionnaire since it was evident that some matters were too complex for reduction to a form amenable to inclusion in a simple 'tick-in-the-box' type questionnaire.

The most obvious area of confusion amongst informants was that of attitudes towards not knowing whether they would be in a placebo or active-drug condition. Considerable explanation of placebo-control randomised clinical trials was necessary before attitudes towards these could be discussed. Even so, informants were clearly in some confusion over the issue. This was typified by one respondent who stated that "doctors know sugar is bad for you so why would they give you a sugar pill?" Indeed, most respondents asserted that they were sure their doctor would always do what was best for them; and that they would not take part in such trials if they did not trust their doctor. If, on the other hand, they did trust their doctor, as most claimed to do, they stated that they would readily accept his or her decisions, whatever they were.

Given the wide target population of the anticipated sample and the nature of the survey, it was essential that the questionnaire be both easy to complete, and easy to code for computer analysis, thus the particularly difficult topic of placebo versus active drug conditions was omitted from consideration in the questionnaire. Nevertheless, it is evident that this issue represents a very important aspect of clinical trial participation. It is also clear, therefore, that it is an issue requiring further investigation and clarification in future research, perhaps being addressed as a single research topic.

3. PILOTING OF THE QUESTIONNAIRE

In all 26 people took part in the piloting of the questionnaire. 20 informants assisted in the process of instrument refinement and the final version was tested on 6 more participants. As with the in-depth interviews, all pilot study respondents were over 60 years of age. Likewise, those who participated in first stage piloting of the questionnaire were comprised of some GP-recruited respondents who were interviewed at the surgery, and some researcher-recruited respondents who were interviewed in their homes or at a private table in the local Age Concern Drop-In Centre. Permission to solicit respondents from the Age Concern site was previously given by the manageress.

GP-recruited informants were canvassed as for preliminary in-depth interviews. Other potential respondents were approached by the researcher who gave an outline of the proposed HMS and the purpose of the survey, together with assurances of anonymity and confidentiality. Potential informants were also informed that this was a preliminary phase of the survey. Early responses to researcher canvassing was a little disappointing, but improved remarkably when the introductory explanation of the study was condensed and simplified.

The original canvassing approach was offering too much information and people were confusing information about the HMS with the questionnaire study. This was made apparent by a respondent who said that she did "not want to have anything to do with testing pills right now". The introductory letter accompanying the questionnaire was therefore amended accordingly.

During the piloting phase each respondent completed the questionnaire alone, except for the presence of the interviewer. Half of the questionnaires were interviewer-administered, and half self-completed under the supervision of the researcher. In addition to giving responses to the questionnaire items, respondents were also asked to comment on the style, comprehensibility, and ease of completion of the questionnaire.

None of the items were reported to be offensive, redundant or difficult to answer, though one respondent did state that a couple of items in the attitude section were ' a bit cheeky' since they suggested one could be ruder to nurses than to doctors, and ruder still to receptionists. These items were thus removed from the attitude section of the questionnaire, and replaced in a different form at the end of the final version.

Another respondent began the session with the statement that whilst she was prepared to answer any questions put to her, and do anything she could to help with medical research, she was not prepared to 'strip off' because this was an exercise she found both physically and emotionally very difficult to perform. So strong was her objection to this possible requirement that it was decided to include this concern as an item in the amended instrument so that the generality of it might be assessed.

Several respondents stated that they liked the style of the instrument and the expression of various 'shades of opinion' that it allowed. However, two respondents did report that they found the statement format unnecessarily confusing, and suggested that a more straightforward set of questions would be better. This suggestion was supported by the researcher's own experience of administering the questionnaire especially to some of the older repondents for whom completion was easier when the interviewer rephrased the statement items as questions.

Accordingly, the instrument was altered to transform the statements into questions and the answer options became: Very Much So; Yes; Uncertain; No and Definitely Not. In this way the same basic attitudes were represented and the opportunity for expressing different shades of opinion was retained, but comprehensibility was facilitated. The benefit of this change in style was immediately clear during the final pilot testing of the questionnaire when the average completion time almost halved and in which there was no evidence of the 'double-takes' or requests for clarification of some items which had sometimes occured during the initial piloting.

Final piloting provided a check on the suitability of the ammended version for easy self-completion by respondents at home. All six of the final pilot study respondents were researcher-recruited repondents who self-completed the questionnaire in the Age Concern centre. All reported that it was easy and interesting to complete, and thus the final version was determined (see appendix 4).

4. THE QUESTIONNAIRE

The questionnaire was comprised of 2 sections - personal details and attitude items.

4.1 SECTION ONE

The first section, pages 1 and 2, related to sociodemographic and health details of respondents. Questions **1 to 4,** sociodemographic items, were included so that comparisons of sub-groups based on age, sex and socio-economic groups could be made in respect of attitudes expressed. Questions **5, 6, and 9** were used as indicants of current health status, and questions **10 to 12** related to levels of health consciousness and motivation to keep healthy. Questions **7 and 8** were directly related to eligibility for entry in the HMS, and perceived susceptibility to cardiovascular disease respectively.

As with demographic details, the inclusion of these health-related items afforded the opportunity for subgroup comparisons, in addition, they provided information necessary for prediction of utilisation of preventive medicine based on the Becker and Maiman Health Beliefs Model.

The top of page 1 was heavily marked 'CONFIDENTIAL' and instructions for the desired mode of answering the items were given.

4.2 SECTION TWO

This section, pages 3 to 7, represented the attitudinal questions, which were comprised of questions formulated from attitude statements expressed by informants during in-depth interviews. They related to the various aspects of preventive medicine and associated clinical trials discussed during in-depth interviews. Whilst questions relating to specific aspects were generally grouped together, there were some cross-check questions interspersed in other groupings throughout the questionnaire. Also, use was made of apparently repeated questions, which were slightly different in their wording (eg: 6 and 42; 8 and 15; 13 and 14; 22 and 43), and which did, in fact, ask slightly different things. At the top of this section instructions for completion were reiterated, together with a reminder that there were no right or wrong answers and that it was important for answers to indicate how respondents really felt about each question.

Attitude Items

Items 1 to 5,(p.3) and item 25(p.5) related to the respondent's relationship with, and trust in his or her doctor. The relevance of these questions resides in the fact that in-depth interview informants all cited a good relationship with a doctor they could trust, as prerequisite to participation in any project with which the doctor may invite them to become involved.

Item 6(p.3) was a direct question of willingness to participate in cardiovascular disease screening, and less specific questions of desire to accept a health check were asked again in **items 12(p.4) and 42(p.6)**.

Item 7(p.6) was related to items 1 to 5 in that it might give an indication of the respondent's relationship with his or her doctor, but it was included in the questionnaire to represent comments made in interviews that people might find themselves taking part in projects they didn't really want to participate in just because they would find it hard to refuse something the doctor suggested they should do. **Items 35 and 36(p.6)** were included for a similar purpose, though these questions related directly to clinical trials rather than to health checks. (Interestingly, none of the depth interview informants who supported this proposition admitted that it might apply to them).

Items 8 and 9(p.3) represented attitudes expressed about problems associated with lifestyle changes that might be advised for people at risk of cardiovacular disease, with further investigation of these provided by **items 15(p.4),48 and 49(p.7)**. The inclusion of these items allowed not only an assessment of the generality of attitudes towards changes of dietery and smoking habits,but also provided information of perceived costs of treatment that could be used in the prediction of preventive medicine utilisation based on the Becker and Maiman Health Beliefs Model. More information for this purpose was provided by **items 10 and 11(p.3)** which related to attitudes towards giving blood samples and having blood pressure tests respectively. **Items 45 and 46(p.7)** were also used to investigate attitudes towards medical tests, though in these questions the tests were not specified.

Items 13 and 14(p.4) seem to be different wordings of the same question and thus somewhat tautological. However, it was apparent from the interviews that it is quite possible for people to be inconsistent in their attitudes to this area of having knowledge of their health status. There seemed to be a feeling that people *ought* to want explicit information about their health, and that it was in some way wrong not to

seek this knowledge. By providing items that phrase the question both in terms of wanting to know about latent disease and in terms of prefering not to know about it, it was hoped that respondents would find it easier to answer in a way which would reflect their true attitudes. A cross-check question was provided by **item 50(p.7)**. Information of attitudes towards knowledge of latent disease was essential for the preventive medicine project with which this study was associated.

Items 16,17,18 and 19(p.4) all related to attitudes towards the concept of prevent medicine and the age-groups to whom it should be offered, whilst **items 20 and 21(p.4)** approached the specific question of preventive medicine run by general practitioners.

Items 22 to 24(p.4&5) represented attitudes towards medical research conducted in general practice expressed by some interview respondents, and **items 28 to 34(p.5)** represented reservations specific to clinical trials that were also identified. Assessment of the generality of these attitudes is clearly important for doctors engaged in any research, but particularly so for that involving clinical trials, whether the drugs being tested are new or well established. Information about perceived costs of preventive medicine in the form of side effects was also afforded by these items and was thus available for use in predicting utilisation of preventive medicine as with items 8 to 11(p.3) above.

Items 26 and 27(p.5) refered to attitudes towards questionnaire completion, and were of particular relevance to the HMS, since participation in this will necessitate the completion of a long and comprehensive questionnaire which asks for information of a very personal and potentially sensitive nature, as well as that related to general health and health history. **Item 44(p.7)** was a cross-check question.

Items 37 to 41(p.6) related to opinions of the influence of psychological factors on both the genesis and the treatment of hypertension. In-depth interview informants were unanimous in their expressed beliefs that psychological factors play an important part in both the aetiology and the exacerbation of hypertension. They were also in accord in respect of the opinion that any effective treatment of hypertension must involve relaxation. Indeed, most declared that this was something people with hypertension automatically try to do for themselves. Interesting information would be gained from an assessment of the generality of these attitudes, and this information may hold important implications for future approaches to the treatment of people with essential hypertension.

Item 47(p.7) represented the strong reservation held by one pilot study respondent who declared a willingness to do almost anything to please her doctor or help with medical research as long as it did not involve having to 'strip off', an experience she found both physically and emotionally hard to do. Although this was an attitude spoken aloud by only one respondent, so strongly was it expressed that its inclusion in the questionnaire seemed prudent if a true reflection of informants attitudes was to be achieved. If this attitude is at all widespread amongst respondents, especially those over 60, then clearly it is an attitude that needs to be made known to those involved in any research that entails health checks.

The last two items on the questionnaire asked respondents to indicate who they would prefer to issue participatory invitations and perform the health checks respectively.

Finally, respondents were asked to check that they had answered all the questions, and to use the space provided to make any comments they wished about preventive medicine, health checks, pill testing, and/or the questionnaire. As a footnote respondents were thanked for their time and co-operation in completing the questionnaire; and reminded that there was no need to use a stamp when posting it back in the freepost envelope.

5. SAMPLING FRAME AND STRATEGY

The sample was drawn from five sites in the environs of Milton Keynes, over a four week period in June and July 1986. These sites were:
Site 1 : a group practice of 6 doctors in Leighton Buzzard;

Site 2 : a group practice of 5 doctors in Stantonbury, Milton Keynes;

Site 3 : the Age Concern Drop-In Centre in Milton Keynes;

Site 4 : the Milton Keynes Shopping Centre;

Site 5 : Milton Keynes Central Railway Station.

General practices were chosen as distribution sites because recruitment for the HMS will take place in general practices. Also, it was considered possible that attitudes expressed about medical projects may be different if solicitation of those attitudes occured in a medical setting than if

it occured in settings divorced from medicine. Furthermore, it was assumed that respondents obtained from GP waiting rooms would include several elderly people, and it was hoped that the over sixties would comprise about half of the final sample. Finally, as distribution in GP waiting rooms would associate the study with the GP, it was anticipated that good response rates would be obtained from these sources

The choice of the Age Concern Drop-In Centre as a distribution site was determined by the desire to obtain a large proportion of ambulant elderly respondents.

The Milton Keynes Shopping Centre was used because this is a very large complex which attracts many customers and visitors, and it was hoped that a good cross-section of the population could be approached in this location.

Finally, the railway station was selected as a site from which working people could be approached since it is used by both commuters and people working locally.

At the General Practices, sites 1 and 2, questionnaire distribution was effected at both morning and evening surgeries, and all adults entering the waiting rooms were approached with a request for participation in the survey. At site 1 questionnaires were distributed during Tuesday morning and Monday evening surgeries, and at site 2 the sample was obtained during Thursday morning and Friday evening surgeries.

Distribution of questionnaires at the Age Concern Drop-In Centre was effected over two weeks,each day of the week being represented. As with the strategy employed at sites 1 and 2, each person entering this site was approached .

The sample obtained from site 4 was achieved over 2 Monday sessions, during which every 3rd person who passed the researcher was approached.

A combination of the sampling strategies used at sites 1 to 4 was utilised at site 5 which was attended on two occasions, a Tuesday and a Thursday, between the hours of 06.40 and 09.30.

6. DISTRIBUTION PROCEDURE AND RETURNS CHECK

All questionnaires were given out in Freepost return envelopes. The envelopes were numbered to enable a check on returns. The use of different coloured questionnaires for different distribution sites further facilitated identification of returns from the various locations.

Prior to the distribution of questionnaires permission for distribution was sought, in person, from the authorities associated with each proposed distribution site. In addition, letters were sent to the general practitioners (copies of these letters are given in appendix 5).

A standard request for participation was used at all sites (see appendix 6). The sex, age group, occupation and envelope number of potential respondents were noted on a response (see appendix 7). The sex and estimated age group of outright refusers was also noted. All people approached were thanked for their time.

When questionnaires were returned, the number on the envelope was noted and the age, sex and occupation details on page 1 were checked against those on the response sheet for that number. Respondent numbers were then assigned to each questionnaire and returned numbers crossed off the list. This method enabled a limited demographic comparison of returners and non-returners thus allowing some assessment of sample bias.

7. STATISTICAL ANALYSIS

Response rates were computed, and each questionnaire was coded for computer analysis. Coded responses were entered into the Vax computer using the SPSSX package, and the following statistical analyses were performed;

(1) Frequency counts of all items on the questionnaire
(2) Principal Components analyses
(3) Computation of factor scores for metavariables identified from the Principal Components analyses
(4) Anovas using metavariables
(5) Multiple Regression analyses
(6) Discriminant Function analyses
(7) Crosstabulation Chi Square tests on selected variables.

CHAPTER 3

RESULTS

Quantitative and qualitative data were collected for the study and both will be presented in this section.

QUANTITATIVE DATA

No hypotheses were put forward for testing in this exploratory investigation, therefore the presentation of results will reflect the nature of the study and the exploratory data analysis which was performed. The format of the presentation will be as follows:-

(1) Details of Response Rates

(2) Frequency Values

(3) Principal Components Analysis

(4) Anovas using Metavariables identified from Principal Components Analysis

(5) Multiple Regression Analysis

(6) Discriminant Function Analysis

(7) Chi Square Crosstabulation Tests

(8) Summary of quantitative results

QUALITATIVE DATA

The most important qualitative data collected in the study were those of respondents' comments written on the back of questionnaires, and a summary of these will also be given in this section.

QUANTITATIVE RESULTS

1. RESPONDENTS

A total of 770 people were approached with a request for participation in this study and 686 accepted a questionnaire. Of those refusing to participate only 4 declined after hearing what the survey was about, the remainder giving refusals before the nature of the survey was explained. Neither sex and no age group predominated initial refusers.

Of the 686 who took questionnaires, 442 returned completed instruments in time for analysis. This represented an overall response rate of 64.43%. There was little difference in the overall response rates of males and females - 63.75% and 65.2% respectively; and only small variation in the response rates from the various sites, the range being from 61% site 2 to 68.5 % site 4.
However, there was some difference in the response rates of males and females from within some of the sites with the response rates being:-

site 1 (Doctors surgery, Leighton Buzzard)	male 55% female 64%
site 3 (Age Concern Drop-In Centre)	male 70% female 61%
site 4 (Shopping Centre)	male 60% female 78%

Compared with national figures (CSO, Annual Abstract of Statistics, 1986) people aged 60 and above were over-represented in the sample (37% against 17.7% nationally), but this was a deliberate strategy. An unintentional discrepancy between the sample and national figures was found in respect of sex (all ages), though the difference was quite small and it was in the right direction: -

National Figures		Sample Figures	
Males	Females	Males	Females
49%	51%	43%	57%

Interestingly, this slight over-representation of females in the sample as a whole, did not apply in the over 60s. Indeed, within the older group, the over-representation is reversed, and considerably so.

% MALES AND FEMALES OVER 60 YEARS OLD

National Figures		Sample Figures	
Males	Females	Males	Females
41.5	58.5	50.6	49.4

From the data obtained, using the Registrar General's Classification system, the sample did conform quite closely to the socio-economic background of the local population from which it was drawn -ie Milton Keynes and Leighton Buzzard. However, the information available as the basis for socio-economic grouping of respondents was not very detailed, and probably inadequate for confident socio-economic classifications. Therefore, no analyses based on socio-economic groupings were performed.

Approximately one quarter of the respondents in this sample reported a history of some cardiovascular disorder.

1.1 NON-RESPONSE

237 of the 686 who accepted a questionnaire failed to return it, with overall non-response rates being approximately 35% for both males and females. There was, however, considerable differences in the non-response rates of various age groups as shown below:-

	AGE IN YEARS					
	18-29	30-39	40-49	50-59	60-69	70+
NON-RESPONSE RATES (as % of Qnaire takers in each age group)	40.6	36.9	28.7	32.1	25.0	41.1

Regarding distribution sites, the greatest non-response rate (39%) came from site 2 - a general practice in Milton Keynes, and the smallest (31%) from sites 3 and 4 - the Age Concern Drop-In centre and the shopping centre respectively.

2. FREQUENCIES

Frequencies were computed for all variables on both sections of the questionnaire. From frequency counts, a profile of sociodemographic and health-related characteristics of the sample was obtained and generality of attitudes assessed. Frequencies of all responses to each questionnaire item are given on the appended copy of the questionnaire, appendix 4. Tables 1 and 2 below show selected frequencies from section one to give an indication of the health status and health consciousness characteristics of the sample. All values represent respondents own subjective assessments.

TABLE 1 Selected frequencies relating to the first section of the questionnaire- reported health status and health consciousness of respondents,

General Health Excellent or Good	As Fit or Fitter than Average	History of CVD Symptoms	Not Really Worried re Developing CVD	Very Interested In Own General Health	Very or Quite Careful about Healthy Habits eg diet, smoking
77%	87,5%	24,5%	67,2%	50,5%	86,1%

TABLE 2 Percentage of respondents reporting actions taken to improve health by changing various behaviours in the last few years,

Changes in Diet	Changes in Exercise Levels	Changes in Smoking Habits	Changes in Drinking Habits
54,8%	35,3%	15,3%	15,7%

An omission on the questionnaire was an item about current or past smoking habits. 44.6% of respondents were self-declared non-smokers, but it cannot be assumed that this figure represented all non-smokers in the sample. Therefore, further analysis of the smoking variable was not undertaken.

ATTITUDE ITEMS

Items for which there were particularly high rates of agreement in attitudes expressed included items relating to: (1) percieved doctor-patient relationships; (2) the general concept of preventive medicine and screening programmes; (3) the desire for information about diagnosis; (4) undergoing medical tests; and (5) psychological influences on hypertension. A summary of frequency data relating to these factors is given in tables 3 to 7 below.

TABLE 3

Frequencies of items relating to doctor-patient relationships

QUESTION No, VARIABLE NAME & CONTENT SUMMARY	YES	NO	UNCERTAIN
1 (Geton) Do you get on with your Dr,	84,8	2,7	12,4
3 (Canask) Can you ask for information	84,2	6,7	9,1
35 (Hrdrfpls) Is it hard to say no to your Dr, re testing pills	11,4	82,2	6,4
36 (Upsetdr) Are you frightened of upsetting your doctor by refusing to help in testing pills	4,3	91,3	4,3

TABLE 4

Frequencies of items relating to the concept of preventive medicine etc,

QUESTION No, VARIABLE NAME & CONTENT SUMMARY	YES	NO	UNCERTAIN
6 (Wantcu) Would you want a screening check	96,4	1,1	2,1
16 (Gooduse) Are preventive checks good use of NHS resources	92,9	4,2	3,0
18 (Sxtys) Should P,M,* be offered to people in their 60s	83,2	9,0	7,8
19 (Svntys) Is it silly to offer P,M, to over 70s	10,8	80,4	8,9
42 (Acceptcu) If offered a check would you accept	97,3	,7	2,1

TABLE 5

Frequencies of items relating to desire for diagnosis information

QUESTION No, VARIABLE NAME & CONTENT SUMMARY	YES	NO	UNCERTAIN
13 (Straight) Would you want to know if you were at risk of CVD	95,7	2,0	2,3
14 (Notknw) Would you rather not know	7,7	88,0	4,4

* P,M,= Preventive Medicine N,B, full questions appear on the questionnaire in appendix 4 and variable names appear on top of each coding box in the right hand margin,

TABLE 6

Frequencies of items relating to medical tests

QUESTION No, VARIABLE NAME & CONTENT SUMMARY	YES	NO	UNCERTAIN
10 (Bldsmp) Do you mind having a blood sample taken	7,1	92,3	7,0
11 (Bp) Do blood pressure tests worry you	4,6	95,0	,5
45 (Fearprob) Would fears of medical tests put you off having a health check	10,6	86,1	3,2

TABLE 7

Frequencies of items relating to psychological influences on hpertension

QUESTION No, VARIABLE NAME & CONTENT SUMMARY	YES	NO	UNCERTAIN
37(Stress) Do you think stress and personal problems can affect people's B,P,*	93,8	1,1	5,0
38 (Relax) Can relaxation help B,P,	91,7	2,3	6,0
39 (Onlymed) If people are at risk of developing CVD can only medicines help	7,8	80,9	11,4
40 (Rlxpls) Might people with B,P,problems need help in learning to relax as well as pills	92,2	2,1	5,7
41 (Copestrs) Could people with B,P,problems be helped by being taught to cope with stress	93,4	0,9	5,7

* B.P.= Blood pressure

As well as the generality of attitudes presented above, a few other questionnaire items attracted responses for which there was a high rate of agreement. Most of these items were on page 7 of the questionnaire, and they related to factors which might put people off booking in for a screening check. In all cases the majority of responses indicated that these would not be very strong deterrent factors. When the two 'no' categories of 'No' and 'Definitely Not' were collapsed, the percentages of respondents reporting that they would not be put off by given factors were as shown in table 8

TABLE 8 Percentage of respondents who would NOT be deterred by the shown factors from booking in for a health check.

FACTOR	% CLAIMING *NOT* TO BE DETERRED
Having to fill in a long form first	75%
Worries that a check might lead to other tests	83,5%
Worries about having tests	86,1%
Worries about 'stripping off' for medical examination	84,2%
Worries about being told to loose weight/change diet	92,9%
Fears of what health problems might be found	77,6%

Two other items on the questionnaire produced over 80% agreement and these were: question 15, page 4 (Fearmot) 'would being at risk of a heart attack or stroke motivate you to change your habits if the doctor advised this, even if you found it hard to change?'; and question 51,page 7,(Whoask) which asked which of 3 health workers people would prefer to invite them to take part in a health study. 'Yes' responses to question 15 accounted for 88.5% of the responses to this question relating to the motivation of fear, and for question 51, from the choices offered- ie. 'your own doctor','the practice nurse', 'the receptionist'- option 1, the doctor, was selected in 80.65% of responses.

An interesting finding from these results was the difference in expressed attitudes towards participation in clinical trials which was observed in the two questions relating directly to this topic. In the first of these items, Q.22,(testpls) respondents were asked whether they thought it was a good idea for family doctors to invite their patients to take part in clinical trials relating to CVD. In the second item ,Q.43,(accptct) they were asked if they would participate in such trials if they were personally at risk of CVD. The frequencies of these items were: -

Testpls: Yes 49.9%, Uncertain 26.1%, No 24.1%;

Accptct: Yes 60.3%, Uncertain 29.7%, No 10%

Thus responses indicated that respondents held more favourable attitudes towards participation when the question was asked with a personal focus than when it was phrased more generally. The rise in 'yes' responses was paralleled by a drop in the 'no' responses whilst the 'uncertain' response rates showed little change.

3. PRINCIPAL COMPONENTS ANALYSIS

After the raw data had been processed and an examination of the frequency values made, it was decided that the next step in the investigative analysis of the data should be that of a factor analysis so that the principal components of the data might be identified.

The main aim of factor analysis and the extraction of principal components is to uncover any patterns in relationships among variables and to discover any variables within the data set which form coherent subsets that are relatively independent of one another. Such a process will allow identification of groups of variables which may be subsumed under metavariables, thus reducing the number of individual variables that have to be considered, and giving a better over-all picture of important factors. Principal components analysis may be used as a confirmatory tool if required, but it is ideally suited to exploratory data analysis, and it was for this purpose that it was employed in further processing of the data.

The first principal components analysis performed on the data entailed inclusion of all suitable variables and 16 factors were extracted which together accounted for 63.7% of the variance. Of these 16 factors, the one accounting for the greatest individual amount of the variance was a 'stress' factor at 12.7%. The variables with the greatest weighting values in this factor were those relating to psychological influences in hypertension (items 37, 38, 40 and 41).

However, whilst 16 factors were considerably more manageable than 60 individual variables, they still represented a rather large quanity of metavariables. Also, because 13 of the 16 components each accounted for less than 5% of the variance, a second principal components analysis was performed with just 30 variables entered. These 30 variables did not include those relating to psychological influences in hypertension since investigation of this area was a secondary, rather than primary objective of the study.

A summary table of the 9 principal components extracted from this second factor analysis is given in table 9, over.

TABLE 9 Summary Table of Principal Components Analysis

Factor No,& Metavariable Name	Proportion of Variance	Associated Variables (Item Nos) & their Factor Weights
1, Deterrents	15,5%	45,leadmts(,85); 46,medtsts(,89); 47,strip(,61); 50,fearprob(,79)
2, Dr,-Patient Relationship	9,1%	1,geton(,81); 3,canask(,80)
3, Questionnaire	7,5%	26,nopinf(,72); 27,longques(,82); 44,fillfrm(,79)
4, Smoking	6,3%	49,stpsmk(,91)
5, Information	5,4%	13,straight(,83); 14,notknw(-,67)
6, Health Consciousness	4,7%	10,intrst(,73); 11,careful(,72)
7, Low Health Status	4,2%	5,genhlth(-,72); 7,htbp(,60)
8, Clinical Trial Worries	4,1%	33,morepls(,74); 34,offgdpls(,69)
9, Research Worries	3,9%	23,gpigs(,73); 24,respts(,61)
TOTAL VARIANCE ACCOUNTED FOR	60,3%	

Although this principal components analysis was an improvement on the first attempt, it was still not entirely satisfactory due to the relatively low proportion of the variance accounted for by the 9 factors. Also, the first component was the only one which accounted for over 10% of the variance. Nevertheless, the extracted components were coherent factors, and they offered some basis for further analysis.

4. ANOVAS ON METAVARIABLES

The statistical tests which followed most directly from the principal components results were analysis of variance (ANOVA) tests in which individual metavariables were analysed by sex and age in two way anovas (see appendix 8 for rationale behind the use of anovas on ordinal level raw data). The first 3 metavariables identified from the principal components analysis were each entered into two way anovas by sex and age, age having been previously recoded into 2 levels ie. (1) under 60 and (2) 60 and above.

Regarding the first metavariable, the 'deterrents' metavariable, statistically significant effects were shown for age, sex, and age/sex interaction. Examination of cell means showed that respondents aged 60 and above were more likely than younger respondents to have responded positively to items 45.46.47 and 50, ie they were more likely than under 60s to be put off booking in for a screening check by worries that a check up might lead to other medical tests, worries about having medical tests, worries about having to 'strip off' for a medical examination, and fears of what health problems or diseases might be found.

Similarly, women were more likely than men to have responded positively to these deterrent items. Also, women over 60 were the most likely of all to be put off, whereas men under 60 were the least likely. Table 10 represents a summary of this anova result, and tables 11 and 12 represent summary tables of the anovas for the metavariables of 'doctor-patient relationship' and 'questionnaire' respectively.

TABLE 10 Summary Table of 2 Way Anova of Deterrents by Age and Sex

Source	Sum of Squares	df	Mean Square	F Ratio	Significance
Main Effects	212,79	2	106,39	17,26	0,000
Age	72,68	1	72,68	11,79	0,001
Sex	158,12	1	158,12	25,66	0,000
2 Way Interaction	29,60	1	29,60	4,80	0,029
Explained	242,38	3	80,79	13,11	0,000
Residual	2613,10	424	6,16		
Total	2855,49	427	6,69		

TABLE 11 Summary Table of 2 Way Anova of Dr,-Patient Relationship by Age and Sex

Source	Sum of Squares	df	Mean Square	F Ratio	Significance
Main Effects	18,64	2	9,32	4,51	0,012
Age	18,53	1	18,53	8,96	0,003
Sex	0,02	1	0,02	<1	NS
2 Way Interaction	0,15	1	0,15	<1	NS
Explained	18,79	3	6,26		
Residual	887,05	429	2,07		
Total	905,84	432	2,10		

TABLE 12 Summary Table of 2 Way Anova of Questionnaire by Age and Sex

Source	Sum of Squares	df	Mean Square	F Ratio	Significance
Main Effects	17,64	2	8,82	2,28	0,103
Age	16,72	1	16,72	4,33	0,038
Sex	1,86	1	1,86	<1	NS
2 Way Interaction	1,52	1	1,52	<1	NS
Explained	19,15	3	6,38	1,65	0,177
Residual	1622,64	420	3,86		
Total	1641,80	423	3,88		

As is shown in table 11, there was a significant difference between the under- and over- 60s, but not between the sexes in respect of responses given to the metavariable of Dr.-patient relationship, and the difference was such that respondents aged 60 and over were significantly more likely to report a good relationship with their doctor than were the younger respondents.

Similarly, for the 'questionnaire' metavariable, a significant difference was found to exist between the two age groups but not the sexes. In this analysis cell means were lower for the older age group which indicated that they were more likely than younger respondents to respond unfavourably towards questionnaire completion.

5. MULTIPLE REGRESSION ANALYSIS

Multiple regression analyses were performed to assess the strength of the associations between respondents' willingness to take part in screening and clinical trials, and groups of potential predictor variables.

This technique yields a multiple correlation coefficient value between a dependent variable(DV) and a group of independent variables(IVs). Examination of R^2 changes also enables an assessment of the relative contribution of individual IVs in the prediction of the DV. A further feature of multiple regression analysis is that it provides weighting values for IVs, so that subsequent prediction of a given DV value can be made on the basis of knowledge of appropriate IV values.

In the first regression relating to screening, the DV was Intention To Participate in Screening (Acceptcu) and the IVs were comprised of the 17 variables directly related to screening participation. These items were: Wantcu, Cutbut, Bldsmp, BP,(6,8,10 & 11,p.3); Lkregcu, Straight, Fearmot, Gooduse, Toobusy,(12,13 15,16, & 20, p.4) Nopinf, Longques, (26 & 27,p.5); Fillfrm to Losewt and Fearprob(44-48 & 50,p7) The smoking variable was omitted because of inadequate measures. 396 cases were analysed so there were at least twenty times as many cases as variables.

Attitude-to-participation items accounted for the greatest proportion of the variance, so in a second analysis, the same DV applied, but the IVs used were comprised only of attitude-to-participation items (Wantcu, Lkregcu, Gooduse & Toobusy).

The third regression analysis employed the same DV, but utilised the questionnaire items of relevance to the Health Belief Model(HBM). As described in Chapter I (section 4.3.1), variables important to this function are those which relate to (1) a concern with health and a motivation to protect it; (2) susceptability to the disease in question; (3) a belief that the consequences of the disease will be severe if left untreated; and (4) a belief that the benefits of preventive measures outweigh the costs involved. Accordingly the variables employed in this analysis were (1) Intrst and Careful; (2)Htbp; (3) Worry; and (4) Gooduse, Cutbut, Bldsmp, Bp, Straight, Fillfrm to Losewt & Fearprob. Summaries of these three multiple regression analyses are given in tables 13 to 15 over.

For regressions relating to clinical trial participation, the DV was Intention to Participate in Clinical Trials (Accptct) and the IVs were the 12 items pertaining directly to medical research and trial participation,

plus 2 items relating to asking for information. These items were: Canask, Toomnyq (3 & 5,p3); Medres, Testpls (21 & 22,p4) Gpigs, Respts, Sideffs to Offgdpls (23,24, 28 to 34,p5) Hrdrefpls (35,p6). 400 cases were analysed, so again the cases to variables ratio was well within regression limits. As with screening, attitude to the general concept of clinical research contributed most to the equation. Therefore, a second regression using just these items was performed (Medres, Testpls, Gpigs, Respts). Finally, items of relevance to the HBM model were also tested as predictor variables for the DV. These items were as for Screening for the first 3 sections and for (4) they were Sideffs to Offgdpls. Summaries of these 3 multiple regression analyses are given in tables 16 to 18 below.

TABLE 13 Summary of Multiple Regression Analysis With Intention To Participate in Screening (Acceptcu) as the Dependent Variable and 17 Screening-Related Independent Variables

FINAL VALUES				
Multiple R	R Square	Adjusted R^2	F Value	Significance
,649	,421	,411	40,447	,0000

VARIABLES IN THE EQUATION							
Variables Entered (in order of inclusion)		R^2 Change	Beta	Part Corr	Partial Corr	T	Sig,
Want a regular check	(Wantcu)	,220	,252	,220	,278	5,71	,000
Like idea of regular check	(Lkregcu)	,094	,227	,206	,262	5,3	,000
Fear would motivate habit change	(Fearmot)	,038	,166	,150	,193	3,89	,000
Fear of medical tests	(Medtsts)	,028	-,139	-,128	-,166	-3,33	,000
Want to be told 'straight'	(Straight)	,018	,150	,132	,171	3,42	,000
Put off by long questionnaire	(Longques)	,012	-,125	-,114	-,149	-2,98	,003
Easy to make dietry change	(Cutbut)	,008	-,098	-,094	-,122	-2,44	,015

TABLE 14 Summary of Multiple Regression Analysis With (Acceptcu) as the Dependent Variable and Attitude to Screening Concept IVs

FINAL VALUES				
Multiple R	R Square	Adjusted R^2	F Value	Significance
,561	,315	,310	65,230	,0000

VARIABLES IN THE EQUATION						
Variables Entered (in order of inclusion)	R^2 Change	Beta	Part Corr	Partial Corr	T	Sig.
Wantcu	,214	,334	,306	,347	7,63	,000
Lkregcu	,086	,271	,249	,288	6,21	,000
Gooduse (screening good use NHS resources)	,014	,133	,119	,143	2,98	,003

TABLE 15 Summary of the Multiple Regression Analysis with (Acceptcu) as the DV and HBM-relevant Items as the IVs

FINAL VALUES				
Multiple R	R Square	Adjusted R^2	F Value	Significance
,555	,308	,299	35,196	,0000

VARIABLES IN THE EQUATION						
Variables Entered (in order of inclusion)	R^2 Change	Beta	Part Corr	Partial Corr	T	Sig.
Straight	,152	,258	,240	,278	5,75	,000
Medtsts	,082	-,244	-,223	-,259	-5,34	,000
Gooduse	,047	,202	,187	,219	4,47	,000
Intrst(extent of interest in gen. health)	,019	,135	,134	,159	3,20	,001
Fillfrm(put off check-up by having to fill in long form first)	,007	-,085	-,087	-,104	-2,08	,038

TABLE 16 Summary of Multiple Regression Analysis With Intention To Participate in Clinical Trials(Accptct) as the Dependent Variable and 14 Clinical Trial related IVs

FINAL VALUES				
Multiple R	R Square	Adjusted R^2	F Value	Significance
,544	,296	,287	33,11	,0000

VARIABLES IN THE EQUATION						
Variables Entered (in order of inclusion)	R^2 Change	Beta	Part Corr	Partial Corr	T	Sig.
If GPs think pills will hold off CVD should they ask their pts, to help test these pills (Testpls)	,194	,282	,246	,281	5,82	,000
Objection to taking pills for research if already on medication (Morepls)	,054	-,196	-,178	-,207	-4,21	,000
Taking pills for long time could lead to cancer (Cancer)	,020	-,143	-,141	-,166	-3,34	,001
Should GPs involve their pts, with medical research (Medres)	,016	,144	,132	,155	3,11	,002
Objection to taking low dose pills daily to stay healthy (Lowpls)	,012	-,112	-,108	-,127	-2,55	,011

TABLE 17 Summary of Multiple Regression Analysis With (Accptct) as the D. V. ans Attitudes to the General Concept of GP-run Clinical Trials as the IVs

FINAL VALUES				
Multiple R	R Square	Adjusted R^2	F Value	Significance
,442	,196	,192	50,58	,0000

VARIABLES IN THE EQUATION						
Variables Entered (in order of inclusion)	R^2 Change	Beta	Part Corr	Partial Corr	T	Sig.
Testpls	,178	,371	,346	,360	7,88	,000
Medres	,017	,140	,131	,145	2,98	,003

TABLE 18 Summary of Multiple Regression Analysis with Accptct as the DV and HBM-related Items as the IVs

FINAL VALUES				
Multiple R	R Square	Adjusted R^2	F Value	Significance
,429	,184	,176	22,88	,0000

VARIABLES IN THE EQUATION						
Variables Entered (in order of inclusion)	R^2 Change	Beta	Part Corr	Partial Corr	T	Sig.
Morepls	,139	-,331	-,323	-,337	-7,20	,000
Cancer	,022	-,150	-,147	-,161	-3,29	,000
Worry(extent of worry re getting CVD)	,012	,106	,106	,116	2,35	,019
Lowpls	,011	-,106	-,104	-,115	-2,33	,020

6 DISCRIMINANT FUNCTION ANALYSIS

Because of the near unanimity of reported intention to participate in screening, it was not possible to perform discriminant function analysis (DFA) in respect of screening. However, DFAs were performed in an attempt to identify variables which might serve to differentiate respondents who reported a willingness to participate in clinical trials and those did not. The groups were determined by responses to item 43, Accptct, (if you were at risk of developing a heart attack or stroke and your doctor invited you to take part in testing medicines which might hold off these possible conditions, would you agree to do so?). It was already shown by the frequency values that 'yes' answers accounted for 60.3% of responses, 'no' answers for 10% and 'uncertain' for 29.7%, so the "priors = size" command was used.

Initial tests using the 3 groups of 'yes','no' and 'uncertain' were strikingly unsuccessful thus, the 'uncertain' and 'no' groups were combined to give rise to 2 groups - 'yes' and 'no', with the no group incorporating the 'uncertains'. Subsequent chi square crosstabulation tests revealed that there was indeed greater similarity between the

'uncertain's and 'no's than there was between the 'uncertain's and 'yes's, so this artificial grouping was validated to some extent.

The results of DFAs were rather disappointing, in that whereas prediction of group membership was reasonably good for group 1 (participants) it was poor for group 2 (non-participants). When all variables of relevance to clinical trial participation were entered, the function accounted for 25% of the variance. The single variable which contributed most to group differentiation was that of Testpls, item 22, which was a more general phrasing of item 43, the item on which group membership was determined. Even so, correct prediction of group 2 (intended non-participants) was only just above the level of chance. When 'Testpls' was eliminated from the analysis, the function accounted for 20% of the variance, though group predictions remained much the same.

A discriminant function analysis was also performed using just those variables which were suggested to be appropriate in predicting utilisation of preventive programmes by the Health Beliefs Model(these variables were detailed in the Multiple Regression Analysis section). This function accounted for only 17% of the variance, and again, the results indicate that prediction of non-participation is not easily achieved.

Although these results were disappointing in one respect, they were valuable investigatory aids, and gave considerable food for thought. Therefore, the results of these 3 DFAs will be summarised in tables 19 to 21 below.

TABLE 19 Summary of Discriminant Function Analysis Including Item 22

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D.F. Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1	83,3%	16,7%	,745	Testpls(22,p4)	-,56	-,77
Group 2	41,9%	58,1%		Morepls(33,p5)	,38	,64
Percent of "grouped" cases correctly classified = 73,25%				Lowpls (32,p5)	,31	,42

TABLE 20 Summary of Discriminant Function Analysis Excluding Item 22

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations	Pooled Within Group Correlations
	Group 1	Group 2		Morepls(33,p5)	,58 ,74
Group 1	79,6%	20,4%	,800	Lowpls (32,p5)	,44 ,49
				Medres (21,p4)	-,36 -,49
Group 2	43,1%	56,9%			
Percent of "grouped" cases correctly classified = 70,50%					

TABLE 21 Summary of Discriminant Function Analysis using Health Beliefs Model Variables

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations	Pooled Within Group Correlations
	Group 1	Group 2			
Group 1	80,3%	19,7%	,831	Morepls(33,p5)	,70 ,80
Group 2	52,2%	47,8%		Lowpls (32,p5)	,32 ,45
Percent of "grouped" cases correctly classified = 67,65%				Cancer (29,p5)	,31 ,36

N,B, GROUP 1=Participants, GROUP 2=Non-participants

* Nos,in brackets after variable names refer to the questionnaire item no, that variable names represent, and the page on which these items appear,

7. CHI SQUARE CROSSTABULATION TESTS

The results of discriminant function analyses did provide some interesting information, but they were not conclusive. Therefore, further exploratory analysis was performed in an attempt to discover whether any significant differences existed between sub-groups of the sample in respect of variables identified as important from the discriminant function results, and a few other variables subjectively selected by the researcher.

Because the raw data was of ordinal level chi square crosstabulation tests were employed. One of the requirements of chi square crosstabulation tests is that expected frequencies in each cell must be at least 5. Because many of the variables tested had attracted few responses in the extreme response options of 'very much so' and 'definitely not',uthe two 'yes' and two 'no' categories were combined to form over all 'yes' and 'no' responses. In this new coding option 1 equated to 'yes', option 2 to 'uncertain', and option 3 to 'no'.

Sub-groups investigated included the sexes; age groups(<60 years versus 60+); respondents with a reported history of CVD versus those without such a history; respondents who expressed a willingness to participate in clinical trials versus those who did not (as for discriminant function group criterion); and respondents from different distribution sites. This latter group were included mainly because both sets of GPs had asked for feedback concerning any differences in attitudes expresssed by their patients compared to other respondents. (Since it was impossible for individual patients to be identified this request was considered reasonable and not representative of a breach of confidence).

Many of the crosstabulation tests undertaken revealed no significant differences between groups, and of those that did produce statistically significant results lambda values were generally very small. Thus, whilst association between variables were found, it was not really possible to predict values for one variable on the basis of knowledge about the other. Nevertheless, it must be remembered that this was an exploratory investigation rather than a confirmatory one, and in this respect the information gained from crosstabulation tests was useful.

Statistically significant Chi square tests are reported below in summary tables, and more detailed results are given in appendix 9.

In the summary tables, the right hand columns of OF>EF are used to denote the response options in which observed frequencies were greater than expected frequencies for each level of the sub-group being tested.

In the first set of results the variables of age and sex were combined to form a new variable - Sage - in which the 4 levels employed were:
(1) Male <60, (2) Male 60+, (3) Female <60, (4) Female 60+

Table 22 Summary Table of Crosstabulations by Sage

(details appendix 9 A)				Sage levels			
				1♂<60	2♂60+	3♀<60	4♀60+
Variable Name & Item No.	χ^2	df	p	OF>EF	OF>EF	OF>EF	OF>EF
Willtel (3,p,3)	36,59	6	,0000	No	No	No	Yes
Cutbut (8,p,3)	31,69	6	,0000	No	No	Yes	Yes
Medres (21,p,4)	17,97	6	,0003	Yes+U*	No	Yes+U	No
Dobest (25,p,5)	23,80	6	,0006	U+No	Yes	No	Yes
Sideffs (28,p,5)	31,00	6	,0000	U+No	No	Yes	No
Offgdpls(34,p,5)	20,98	6	,0018	U+No	Yes	U+No	Yes
Medtsts (46,p,7)	30,76	6	,0000	No	No	Yes+U	Yes+U
Strip (47,p,7)	21,63	6	,0014	No	No	Yes	Yes
Fearprob(50,p,7)	24,93	6	,0004	No	No	Yes	Yes

* U = uncertain

TABLE 23 Summary Table of Crosstabulations by Reported History of CVD (htbp)

(details appendix 9 B)				HTBP Levels	
				1(yes)	2 (no)
Variable Name & Item No,	χ^2	df	p	OF>EF	OF>EF
Cutbut (8,p,3)	6,30	2	,0428	No	Uncertain
Testpls (22,p,4)	10,86	2	,0044	Yes	U+No
Lowpls (32,p,5)	24,49	2	,0000	No	Yes+U
Offgdpls (34,p,5)	9,08	2	,0107	Yes+No	Uncertain

TABLE 24 Summary Table of Crosstabulations by Clinical Trial Participation (Accptct)

(details appendix 9C)				Accptct Levels		
				1(yes)	2(uncertain)	3(no)
Variable name & Item No,	χ^2	df	p	OF>EF	OF>EF	OF>EF
Testpls (22,p,4)	116,18	4	,0000	Yes	U+No	No
Morepls (33,p,5)	73,01	4	,0000	No	Yes+U	Yes
Offgdpls (34,p,5)	30,84	4	,0000	No	Yes+U	Yes

NB λ for testlpls = ,22 with testpls dependent & ,06 with accptct dependent, Thus there is a 22% reduction in error associated with predicting attitudes towards clinical trials run by GPs, if information is available concerning willingness to participate in clinical trials, Similarly, when predicting willingness to participate in clinical trial trials, the error rate is reduced by 6% if information about general attitudes towards clinical trials run by GPs is known, These λ values are the only ones worth noting from all crosstabulation tests, but considering the similarity of the testpls and accptct variables, the predictive association between them is remarkably small,

TABLE 25 Summary Table of Crosstabulations By Distribution Site (Where)

(details appendix 9D)				Where Levels				
				1	2	3	4	5
Variable Name & Item No.	χ^2	df	p	OF>EF	OF>EF	OF>EF	OF>EF	OF>EF
Medres (21,p,4)	17,21	8	,0280	Yes	Yes	No	No	Yes+U
Dobest (25,p,5)	25,11	8	,0015	Yes	U+No	Yes	U+No	U+No
Offgdpls (34,p,5)	18,34	8	,0188	Yes+No	U	Yes	Yes	No

Some of the more interesting aspects of these results were found amongst the finer details of the analyses which are given in appendix 9, and consideration will be given to these in the discussion section.

8. SUMMARY OF QUANTITATIVE RESULTS

In summary it may be said that the results were interesting and informative, if not exactly conclusive. An indication of the generality of attitudes towards each variable was afforded by examination of frequency counts, and it was evident that there were quite high levels of agreement on a number of factors. These factors included:

(1) perceived doctor-patient relationships which were generally reported to be good;

(2) the desirability of screening checks for CVD;

(3) a reported desire for information about diagnosis and treatment;

(4) lack of worry regarding blood pressure tests and blood samples;

(5) the value of psychological techniques as adjuncts to drug treatment for hypertension.

Several metavariables were identified from the results of principal components analysis, but whilst these were coherent factors, no single factor accounted for a very great proportion of the variance. The most influential metavariable accounted for only 15.5% of the variance and this was a 'deterrent' component of which the composite variables related to

worries about: having medical tests; having to 'strip off' for medical examination; and fears of what health problems might be found.

It was apparent, from the results of anovas on metavariables, that there were significant differences between men and women and between respondents over and under 60 on responses relating to some of the principal components - ie those of deterrents, doctor-patient relationships and questionnaire completion.

Multiple regression analyses relating to intended screening participation were quite encouraging in that the best equation accounted for 42% of the variance. 7 variables were in this equation, though attitude items accounted for 31%. When just HBM varibles were used, 30% of variance was accounted for - 23% coming from cost/benefit items. Less variance was accounted for in equations relating to intended clinical trial participation - the best here being 30%. HBM variables only, yielded an equation accounting for 18% of the variance, with cost/benefit items again contributing most.

It was not possible to accurately predict group membership for both intending participants and non-participants on the basis of discriminant function analyses. Whilst prediction of participants was generally good, prediction of non-participants was similar to chance. When just HBM variables were used, a majority of non-participants were misclassified as intending participants.

Finally, from a series of chi square crosstabulation tests, significant differences were found to exist between various subgroups of the sample in respect of a fairly wide range of variables. The subgroups included the sexes, 60+ and under 60 age groups, repondents with and without a reported history of heart trouble or blood pressure problems, and those who had, and had not expressed a willingness to participate in clinical trials.

However, none of these significant associations were accompanied by high lambda values, thus they were of no real predictive value. Nevertheless, the breakdown details of sample responses revealed by the crosstabulation tests did provide some interesting information which was of value to the exploration process.

QUALITATIVE RESULTS

More than 27% of respondents appended comments to their returned questionnaires, and both the sex and age-group distributions of comment makers were commensurate with the sample as a whole. As well as the intrinsic value and interest of these comments, the fact that so many were made suggests that respondents were interested in the study and that they completed the questionnaire with seriousness.

Comments made were of a wide variety. Some were quite brief and relevant to one particular aspect of screening, clinical trials, doctor-patient relationships, or the study questionnaire; whilst others encompassed several topics. Although the style and content of comments were wide-ranging, it was possible to extract a few core themes. Basically, these related to :

(1) the concept of the attitude study and the questionnaire itself;
(2) attitudes towards doctors(both generally and specifically);
(3) the concept of preventive medicine;
(4) drug taking and testing;
(5) 'alternative medicine';
(6) political considerations of preventive medicine;
(7) receptionists and appointment systems.

38 comments were made about theme 1 and these included commendation for the idea of the study: eg. "This survey is an excellent idea, wish I could have a check-up" and "It would be marvellous if the results of this survey could influence this practice to take the initiative to offer health checks as a means of preventive medicine".

Other comments offered either praise or censure for the questionnaire. Most of the unfavourable comments made about the questionnaire related to the lack of a response box for non-smokers, but other complaints included poor phrasing of some items, eg "Question 4 was very badly constructed, I had to think hard what to tick to say patients should ask questions about their treatment"; inadequate information for some questions eg "with some questions, eg 26-32, you'd need to know more about them before giving answers"; and repetition of items eg "too many questions need the same answer".

Conversely, favourable comments included: "the questionnaire was very fair and comprehensive, nothing difficult to answer"; and "it was a pleasure filling in the questionnaire, hope it helps you".

The second theme was mentioned by 36 respondents and here opinions were equally divided between those who enjoyed good relations with their doctor, and those who held little trust in doctors generally. For example "I find if you do as the doctor tells you and you trust him you can't go far wrong" and "I'm not sure that the GP has the patients' interest at heart when pill testing, as there are incentives offered him by the pharmaceutical manufacturers which could cloud his judgement. By definition the GP is not expert in all things,- he should accept this."

Some informants reported a good relationship with one doctor but not with others eg "I've had a lot of trouble with doctors in the past but I've struck gold with this one", and "I trust my own GP but mistrust most others"

Several comments were made concerning the apparent lack of time that doctors have for their patients and one informant summed up the comments of a few when he stated "my doctor works under such self-inflicted pressure because he has so many patients on his panel that the idea he might be interested in preventive medicine is ludicrous".

The concept of preventive medicine together with the need to instil a respect for one's body and begin health eduction at an early age was another popular topic. 35 people gave positive comments on this theme, eg. "preventive medicine must be one of the best uses of NHS resources", and " regular check-ups like well women clinics should be available to all without people feeling guilty about wasting doctors' valuable time. Also health education should be taught to all children from an early age, and they should be encouraged to respect their own bodies."

However, some respondents stated an aversion to research, eg "I'm against experimentation except for existing, very serious conditions, and then only with mutual consent"; and a couple of informants did state that nature should not be interfered with, especially in old people eg. "dying is as natural as being born so what is all the fuss about?"

Several (15) comments relating directly to drug taking and testing were made, and indicated a preference for non-drug treatments, as well as the need for full patient consent to participation in any clinical trial: "people don't like the concept of taking pills on a regular basis, unless the situation is life threatening I'd be very worried about the long term effects of taking any pills"; and,from another informant, "I have no qualms about drug testing as long as the 'guinea pigs' are fully informed of risks and fully trained people have control of the programme, though preventive medicine using proper diet, relaxation, no smoking etc. is surely the best medicine".

One respondent was so concerned about what she regarded to be a blatent over-prescribing of drugs that she offered her own 4 point recipe for a good night's sleep so that others might be helped to avoid the perils of accepting doctors liberal dispensing of sleeping pills!

The need for acceptance of 'alternative medicine' was also a topic which attracted comments from 12 respondents. The alternative approaches suggested included vegetarian, non-smoking, teetotal life-styles "I last saw a doctor for a pension fund 23 years ago- I am a vegetarian, non-smoking teetotaller and walk miles every day"; homeopathic medicine; and spiritual healing.

Another 12 repondents made comments which related to political aspects of preventive medicine such as "preventive medicine should be available to all through higher taxes and private medicine schemes"; " the NHS is underfunded and private medicine should be abolished" and "I'm appalled that inspite of government denials there is a strong feeling that government policy is towards making this positive activity difficult to implement".

Receptionists and appointment systems also provided material for adverse comments, with no postive opinions of them being stated. A typical comment relating to this theme was given by the respondent who stated: "the most off-putting aspects of going to the GP are appointment systems and receptionists who are over-protective of the doctors", and 7 more similar observations were made.

In addition to these relatively popular themes, 6 people commented on the fact they they considered GPs not to be the most appropriate professionals to run research projects and screening checks. For example: "GPs in general have neither the time nor the training or expertise to carry out preventive plans or 'research'.The most effective way of achieving this is to employ people who have been specially trained to do this job"; and "The best people to organise and carry out preventive medicine programmes are nurses in the over 40 age group because (1) nurses can often have more relaxed relationships with patients than can the doctor and thus does not impede dialogue, (2) there is a large reservoir of trained nurses at present not engaged in NHS work available for such a project which could thus take place without any extra work by doctors."

Finally, 2 respondents also commented that female doctors for female patients would go a long way in securing female co-operation in preventive projects.

CHAPTER 4

DISCUSSION

The purpose of the study was to make an exploratory investigation of attitudes towards preventive programmes and clinical trials run in general practice. To recap, the main aims were:

(1) To asesss popular attitudes towards both the concept of screening programmes for CVD, and participation in such projects.

(2) To assess popular attitudes towards both the concept of, and participation in, clinical trials.

(3) To determine public attitudes towards the application of preventive medicine for elderly people.

(4) To identify factors which may serve as potential barriers to participation in clinical research.

(5) To identify any subgroups within the sample who may appear to be particularly reluctant to participate in clinical research.

(6) To assess popular attitudes towards psychological techniques as adjuncts to drug therapies in the treatment of hypertension.

In the following discussion of results, and their implications for clinical research, the first three aims will be considered together, and subsequent aims will be given separate attention.

1. ATTITUDES TOWARDS THE CONCEPTS OF, AND PARTICIPATION IN, SCREENING PROGRAMMES AND CLINICAL TRIALS.

1.1 ATTITUDES TOWARDS SCREENING

From the responses received, it was evident that the concept of screening for cardiovascular disease (CVD) represented a popular form of preventive medicine. Very few respondents regarded such programmes unfavourably, and the overwhelming majority indicated a desire to participate in health checks designed to identify people at risk of CVD.

There was also a strong consensus that older people should be included in preventive programmes. Several respondents made additional comments relating to this topic, and most felt that preventive medicine should be accessible to *all* age groups, and that *all* types of preventive medicine should be more widely available.

However, reported intentions to participate in screening programmes do not necessarily imply actual participation, as was noted in Chapter I. Also, whilst there was general agreement in positive attitudes towards screening programmes , a few potential deterrent factors were identified. These potential deterrents were apparent within certain subgroups of the sample, and will be discussed further later. Nevertheless, it was encouraging to find that there was great generality in the positive attitudes expressed towards screening programmes.

1.2 ATTITUDES TOWARDS CLINICAL TRIALS

Unfortunately, perhaps, such strong commendation was not found regarding clinical trials. Two questionnaire items were used to assess attitudes towards the general concept of and participation in clinical trials. These were: 'If doctors think certain pills may help in holding off possible heart attacks and strokes, do you think it is a good idea for family doctors to invite their patients to help with the testing of these pills?'; and 'If you were at risk of developing a heart attack or stroke, and your doctor invited you to take part in testing medicines which might hold off these possible conditions, would you agree to do so?'.

Only half of the respondents expressed attitudes which indicated favourability towards the concept of clinical tials run by GPs. One quarter of respondents indicated that they were uncertain about this issue, and another quarter that they were against such projects. These

findings were not really surprising, as there is some element of personal risk attached to participation in clinical trials, whereas no comparable risk exists for participation in screening checks.

Interestingly, responses indicated that rather more people than might be expected from responses given to the first item, would agree to take part in clinical trials if they were identified as being at risk of CVD. Responses to the second item showed that 60% of reported attitudes indicated favourability towards participation in clinical trials if they were at risk of CVD, 10% unfavourability, and nearly 30% uncertainty.

Several factors may have been operating to influence this disparity in expressed attitudes towards the two related items. For example, the major difference between the questions is that of focus. In the first item a general focus was adopted, whereas in the second item the focus was strictly personal. Also, whilst the information content of these items may appear to be very similar, in fact it was much more explicit in the second item. This difference in information content is obvious with hindsight, and with the attention drawn to it by some comment makers.

Retrospectively, it is plain that the first item lacks the important clause incorporated in the second, that testing would be performed on those people identified as being at risk of the disease in question. This lack of relevant information in the first item may well have been partially responsible for the the large proportion of 'uncertain' and 'no' responses obtained. However, in both items it was explicity stated that participation would be by invitation. Thus the patient would be the one to take the decision as to whether or not he or she would take part. Also, although the proportion of 'no' responses was relatively low in the second item (10%), there was no real difference in the proportion of 'uncertain' responses to the two questions.

The similarity of uncertain attitudes expressed in response to both items may represent a genuine reflection of doubt about participation in clinical trials. Such doubt may be due to fears of personal safety, or reluctance to act as 'guinea pigs'. The latter issue was addressed in item 23 which asked: "Do you think that doctors involved in research, often use their patients as 'guinea pigs'?" 41% of responses to this item were 'yes' responses, and 38% 'uncertains'. However, the fact that people think that doctors may use their patients as 'guinea pigs' does not necessarily mean that they regard this badly. As Saurbrey et al (1984) found, the majority of their informants felt that the use of human subjects in research was both necessary and desirable. Equally, although, in the present study, one comment-maker did state that he would resent being used as a 'guinea pig'; several in-depth interviewees and

pilot study respondents stated that 'of course' doctors do, and must sometimes use their patients this way. Also, there was no substantial predictive association between responses to the 'guinea pig' item, and those of the item pertaining to clinical trial participation.

The greater favourability expressed towards participation in the personally-addressed question, may reflect a real fear of CVD and a willingness to try anything to avoid it. Interestingly, in the light of this suggestion, it was shown by crosstabulation tests that people with a reported history of CVD were significantly more likely than others to respond favourably to the general concept of GP trials for CVD prevention.

Given the great similarity of the two questions, in spite of the differences discussed above, the predictive relationship between them was of great interest. Discriminant function analysis showed that responses to the first item were the best predictor variables for responses to the second. This result occasioned no surprise, but surprise was occasioned by the relatively low predictive relationship between them, which was revealed in crosstabulation tests.

Lambda values showed that knowledge of attitudes towards personal participation in clinical trials, would reduce the error in predicting attitudes towards GP involvement with clinical research, by 22%. Conversly, the prediction of personal participation would be enhanced by just 6% if knowledge of attitudes towards GP involvement in clinical research was known.

The problematic predictive relationship between attitudes and behaviour is well known (see again Part I, section 5.3). The peculiar independence of attitudes was further demonstrated from the results of the survey. Attempted prediction of preventive behaviour from Health Belief Model components was rather unsuccessful. However, the results clearly supported Fishbein and Ajzen's (1975) assertion that with simplistic measures, it is not only difficult to predict actual behaviour from attitudes; but indeed, it may be unwise to attempt to predict intended behaviour from attitudes expressed towards that same issue in general terms.

Nevertheless, the fact that there was a greater positive response to the question of personal participation in clinical trials, must be encouraging for the HMS, since people invited to take part in these clinical trials will be those identified as being at risk of CVD.

2. IDENTIFICATION OF POTENTIAL DETERRENT FACTORS

2.1 DETERRENTS TO SCREENING.

Clearly, there was little evidence of there being any aspects of screening programmes which may pose major obstacles to screening participation. Rather, both quantitative and qualitative results indicated that people were not only willing to take part in screening programmes, but also that they would like such projects to be more widely available.

Be that as it may, reported attitudes did pertain solely to screening checks, and not to any subsequent compliance with advised treatments. Also, it must be stated yet again, that people do not necessarily do what they say they will do (eg. Rosenthal and Rosnow,1969); and earlier discussions of screening take-up rates (Part I) warned that levels of expressed favourablity towards screening and utilisation of an offered service do not always correspond (eg. O'Brien and Hodes, 1979,). The fact remains that most screening programmes are not fully utilised, though the reasons for this are still unclear.

Detailed examination of the data did provide some clues as to factors which might deter people from participation in screenings, even though they were reported as deterrents by a minority of respondents, and applied mainly to certain subgroups of the sample. For example, nearly one quarter of all respondents stated that they would be put off booking in for a health check if they had to fill in a long form prior to the check. This finding was particularly relevant to the HMS, since completion of a comprehensive questionnaire booklet is a prerequisite to screening in this project.

Likewise, 15% stated that they would be put off by fears of what health problems might be found, and approximately 12% by worries that a check-up might lead to other medical tests. A further 12% cited worries about having to 'strip off' for a medical examination as a deterrent to participation. These proportions of responses are small, but in a project like the HMS which aims to screen 300,000 to 400,000 people, even 1% represents thousands of potential participants.

Time and again, an apparent inconsistency of attitudes was evident from survey results. Often quite different responses were obtained from questions which appeared to be reiterations, but which did, in fact, ask slightly different things. One such example was given in the two items relating to clinical trials. Another related to desires for knowledge

about health status. It was interesting to note that whilst over 95% stated that they would want to know if they were at risk of developing a heart attack or stroke, 15% stated that fears of health problem discovery would deter them from taking part in screening. Similarly, whilst just 1% of respondents stated that they would not want a check-up, up to 22% also stated that they would be put off from having a check-up by various factors.

This inconsistency was, to some extent, expected, since it was evident in the preliminary in-depth interviews. However, it does highlight the difficulty of predicting preventive behaviour from a conglomerate of attitude variables, as Oliver and Berger (1979) have already observed in their criticism of the Health Belief Model.

2.2 DETERRENTS TO CLINICAL TRIAL PARTICIPATION

With regard to clinical trial participation, the survey results clearly indicated that major obstacles did apply. However, the identification of these obstacles was not easily made. Discriminant function tests, which were employed in attempts to identify variables which differentiated potential participants and non-participants, proved to be inconclusive. Some variables seemed to serve well in the prediction of potential participant group membership, but prediction of non-participant group membership was generally poor. Therefore, clear indications of factors associated with intended non-participation, were not available.

The best discriminant function results were achieved when the variable relating to the general concept of clinical trials was included. Even so, whilst nearly 74% of grouped cases were correctly classified in this function, correct classification of non-participants was only 58%, compared with 83% correct classification of potential participant groups. Interpretation of the function shows that the best way to differentiate between those who will and will not participate in clinical trials, is to know whether or not they think GPs should run clinical trials. However, it is as easy to determine attitudes towards intended participation in clinical trials, as it is to determine attitudes towards the general concept of clinical trials. Therefore, in spite of the statistical value of the variable in discriminant tests, the practical value of it in prediction of participation is not very great.

Discriminant function tests employing the variables suggested by the Health Beliefs Model (HBM) also proved to be disappointing. In this analysis prediction of participant group membership was good (80.3%).

Conversly, prediction of non-participant group membership was below the chance level (47.8%), thus the majority of non-participants were misclassified as potential participants. The artificial grouping of discriminant groups, such that 'uncertains' were included with non-participants, may have been partially responsible for this outcome. However, on most of the variables included, the responses of uncertain participants were more similar to responses from non-participants than to responses from participants. Therefore, the incorporation of 'uncertains' and non-participants seemed to be justified.

The variables identified as being most important in the HBM function were those of objection to taking more pills for research if already on medication (Morepls); objection to taking low daily dosages of pills to keep healthy (Lowpls); worries that taking pills for a long time might lead to cancer (Cancer); and worries about the possibility of discontinuation of current effective medication (Offgdpls). These were all cost factors, and items relating to the other components of the model -ie of concern with health and motivation to keep it; susceptibility to the disease; and belief in severe consequences if untreated; - were conspicuous by their absence from the function. Findings from other studies which have used the HBM in prediction of preventive behaviour usually show vulnerability to be the most salient attitude for prediction, with cost-benefit beliefs being the second most important (eg Leavitt, 1979).

Worries about getting a heart attack or stroke could be perceived as representing either the belief that the consequences of cardiovascular risk would be severe if untreated; or, perhaps more likely, as vulnerability to the disease. In multiple regression analysis using the HBM, this 'worry' factor was identified as important to the equation. However, it was the third of only four variables within the .05 significance limits and uniquely contributed just 1% of the variance. The other three significant variables were those also identified in the HBM discriminant function test (Morepls, Cancer & Lowpls). The whole equation only accounted for 18% of the variance.

The attitude item related to the taking of more pills by people already on anti-hypertensive treatment, was a direct reflection of a concern raised by interview informants. So too, was that related to worry about being taken off effective medication in order to participate in medical research. Both concerns were strongly expressed, and both were concerns raised by more than one informant.

It was shown from frequency counts that attitudes towards taking more pills were split. Almost half of the respondents (48.5%) indicated an

objection to taking more pills, and nearly 20% uncertainty about this factor. Similarly, 45.7% of respondents reported a worry that their doctor might take them off good pills they were already taking if (s)he wanted them to help in the testing of other medicines. Again, uncertain responses accounted for 20%. Further evidence that these factors represented possible deterrents to research participation was found from crosstabulation tests.

Potential participants were significantly less likely than uncertain or non-participants to have reported an objection to taking more pills. Also, this first group was significantly less likely than the other groups to have reported a worry about being taken off current effective medication. However, although the differences were significant beyond the .0000 level, the predictive associations were negligable. Nevertheless, it would seem that both of these factors might operate to deter participation in clinical trials, and reassurances on this count appear to be necessary when invitations to participate are extended.

Worries about possible side effects of drugs represented another potential barrier to clinical trial entry, or regimen compliance. Over 70% of responses to this item were positive ones, indicating that respondents were worried about this issue. Further indication of the extent of worries about side-effects was provided by the comments made on the backs of questionnaires. In particular, respondents stated that more information about possible side-effects should be given with prescriptions for all drugs. This finding was in accord with those reported by Meyers and Calvert (1978), who showed that forewarning of side-effects was significantly associated with a reduction in discontinuance of medication. Thus, if worries about side-effects do represent a potential deterrent factor, both ethical and methodological problems may be largely overcome by ensuring that adequate information about possible side-effects is given to participants. Furthermore, if the information given is supported by a well written information leaflet as suggested by Ley and his colleagues, the prospects for regimen compliance may be enhanced.

Apart from specific drug-related worries, preliminary interview informants had also indicated other potential deterrents to participation in clinical research. Most notably, great emphasis had been lain on the fact that they considered a good relationship with their doctor to be prerequisite to participation in any research project he or she might be involved with. Similarly, Saurbrey et al.(1984) found that trust in their doctor was a major factor in Danish patients' considerations of research participation. Despite some adverse comments made about GPs on the back

of questionnaires, there was generally good agreement in positive attitudes expressed towards this issue. The relative lack of variance in responses meant that it was not really possible to investigate differences in this respect in relation to attitudes towards trial participation.

However, it was interesting to note a considerable difference in response rates to the item pertaining to trust in doctors between the patients of the two practices sampled from. The question asked was: "Do you think your doctor would always do what's best for you?" There was a 20% difference in positive answers to this question, with indications of a trust in the doctor accounting for 85.7% of responses from one practice and only 65.6% from the other. More interesting, in the light of what was said above, was the fact that this difference in 'trust' was not reflected in differences of how well people felt they got on with their doctor, or in intended trial participation. However, it would be unwise to dismiss this factor as unimportant in trial recruitment and even more foolish to disregard its possible influence on regimen compliance.

The issue of informed consent was discussed in the Part I (section 2.2) as another possible deterrent to participation in clinical research. The survey did investigate attitudes towards this matter, but it was approached in an indirect rather than a direct manner. Respondents were asked if they thought they could ask for any information they required, and if they felt that they should ask for information. Most respondents reported that they could ask for whatever information they required. Because there was little variance in responses to this question, it was not really possible to investigate the influence of this factor.

However, there was more variance in responses given to the question of how much people felt that they should ask for information. Unfortunately, this item was badly worded, as hindsight, and some comment-makers pointed out. Thus, responses given may not reflect responses intended to be given.

Nevertheless, although consideration of responses to this item must be undertaken with caution, it was found that women aged 60 years and above were significantly more likely than all other groups to indicate that they should not question their doctor. So, whilst the caution is necessary, the effect cannot really be totally dismissed as error. After all, it seems unlikely that the majority of misinterpretations should occur, by chance, within the older women group.

3. IDENTIFICATION OF POTENTIAL DETERRENTS WITHIN SUB-GROUPS

3.1 SUB-GROUPS INFLUENCED BY SCREENING DETERRENTS

It was mentioned earlier in the discussion, that within certain subgroups of the sample, there was an indication that some factors may have a deterrent influence regarding partcicpation in screening programmes. The factors identified were worries about having to strip off for a medical examination, and fears of what health problems might be discovered in a screening check.

Only 11.9% of responses to the 'strip' question indicated that respondents would be deterred from participating in screening, but 82% of this minority were responses made by women. 16.7% of female respondents under 60, and an identical proportion of female respondents over 60, indicated that this factor was a deterrent to screening as far as they were concerned.

Similarly, the overall negative response rate to the item concerning discovery of health problems was small (14.9%). However, again there was a disproportionate number of negative responses from women. 80% of all responses indicating that fears of disease discovery would serve as a deterrent to screening participation, were responses made by women. The power of this potential deterrent was greatest amongst older women, with 30% of this group indicating that they would be deterred by the factor. Within the younger age group 16% of women indictated a similar deterrent influence. These findings echo findings from studies of deterrents to cervical and breast cancer screening (see again Part I, section 4.2).

Given the target population of the HMS, the implications of these findings are not very encouraging. It has already been noted that small proportions represent large numbers when target sample sizes are very big, as they are for the HMS. Thus if nearly 17% of the HMS target population will be deterred from participation in screening by fears of having to undress, and 30% by fears of disease discovery, a lot of potential participants will be lost.

Recognition of the first potential deterrent factor does mean that reassurances that screening will not involve a 'strip' examination could be given at initial recruitment. In this way it is possible that many potential participants would be retained, who might otherwise be lost.

However, little can be done at present to resolve the deterrent influence of the other factor. The fact that it is a deterrent influence which appears to be operating mainly in older women, is a particular problem

for the HMS, which aims to include high proportions of elderly people in their sample. For every year of age over 65, women comprise a progressively greater proportion of the population. Thus women will represent a considerable proportion of the target population of the HMS. If older women are reluctant to participate in screening, the HMS will be faced not only with problems of obtaining required sample size, but also of unrepresentativeness.

Further suggestion that screening programmes may suffer unrepresentativeness due to reluctance of older women to participate, was offered by an examination of response rates. Within the 60 and over age group, non-responses were considerably greater for women than for men. The national figure for sex distribution in the over 60s is: Males 41.5%, females 58.5%. Within the over 60s to whom questionnaires were distributed the proportions were 45.3% to males and 55.7% to females. However, the proportions of responses were 50.6% male, and 49.4% female.

Of course, the survey was a relatively small one, and it was conducted within a very local area. Quite possibly, different results would have been obtained had the survey been conducted elsewhere or nationwide. Thus, it would be unwise to assume that survey results are necessarily generalisable to the population as whole. Also, it must be remembered that response rates achieved for an attitude survey do not necessarily predict participation rates in a screening project.

Nevertheless, responses to surveys about screening participation tend to be greater than actual participation (eg. O'Brien & Hodes ,1979; King,1982), and non-responses to the survey did imply a lack of interest in the project, or a reluctance to complete a questionnaire. In either case, the relatively low response rate of older women did not auger particularly well for the HMS. Furthermore, the higher non-response rate of elderly women in the survey was consistent with Pike's (1976) reported finding that refusals in his Birmingham practice elderly screening project, were consistently higher amongst women than men for all 5 year age groups between 65 and 80 plus years.

Alternatively, it may just be that older women are less inclined to refuse a personal request for participation in a survey in which they do not really want to take part. Thus, some may have accepted a questionnaire without ever really intending to complete it. It would be interesting to know how many older women respond positively to a personal invitation to screening, but decline to make, or keep, an appointment for the actual check.

3.2 SUB-GROUPS INFLUENCED BY CLINICAL TRIAL DETERRENTS

As with deterrents to screening participation, some potential deterrents to clinical trial participation were also found to exist primarily within certain sub-groups of the sample. Generally, deterrent factors in clinical trials were less exclusively operant within sub-groups than were screening factors. However, there was evidence that some sections of the sample were more likely than others to be deterred from trial entry by the influence of particular factors.

For example, a majority of respondents reported worries about possible side effects of drugs, but close examination of the data showed that women reported more worries than men, and younger women most of all. 83% of responses by women under 60 indicated a worry about this issue, as did 70% of women aged 60 and over. This compared with 63% of responses by younger men, and 56.4% by men in the older age category.

One possible reason for this particular worry in younger women may relate to worries associated with contraceptive pills, or to fears of side effects in drugs given to children. Much publicity has been given to a possible link between contraceptive pills and cancer, or CVD. Also, fears of sequalae to infant immunisations are well entrenched, and serve to deter many mothers from taking advantage of the paediatric immunisation service. Both the contraceptive pill and drugs for children are of special relevance to women in their reproductive years. In addition, the survey was conducted at a time when much media attention was focussed on the withdrawal of Junior Aspirin due to its association with Reyes Syndrome.

An indication that such factors might have influenced responses from younger women was found in comments appended to questionnaires. One young female respondent commented that she knew there was a risk of cancer attached to contraceptive pills; and another that she was increasingly concerned about the number of drugs, like Junior Aspirin, that are being taken off the market. Nevertheless, as was suggested in the earlier discussion of this 'side effects' factor, it represented a potential deterrent that is not beyond some degree of resolution.

A potential deterrent factor that was of more direct concern to the HMS, was that of worries about the discontinuation of current effective medication. There was a statistically significant difference between older and younger people on this issue, with more than 58% of older and 38% of younger people indicating a worry that participation in clinical trials might result in them being taken off 'good pills' they were

already taking. Again, the implications of this finding for the design of research recruitment protocols are clear.

In section 2.2 above, it was noted that one sub-group differed from the rest concerning the question that related to whether or not people felt that they *should* ask their doctor for information. Evidence for this difference came from statistically significant chi square crosstabulation tests. The sub-group which differed was, once more, older women. More than half the responses from this sub-group indicated an attitude that doctors should not be questioned, whilst only 26.3% of older men. and well under one quarter of responses from younger people, also indicated attitudes of this type.

It may be that this finding represents a great trust in doctors by older women. Thus, it may indicate that these women would be quite prepared to effectively participate in research if the doctor requests their co-operation. Alternatively, it may indicate poor conditions for the achievement of proper informed consent, and carry with it consequent implications of non-compliance. If older women, who represent a large proportion of the HMS target population, feel that they should not ask their doctors questions, they may not obtain sufficient information on which to base participatory decisions.

As was discussed in Part I, the work of Philip Ley and others has amply demonstrated that without proper informed consent to research participation, compliance with prescribed regimens may well be jeopardised. This may be especially so if these women do not ask all they would like to know about side effects, since 70% of older women reported worries about side effects and previous work (eg. Meyers and Calvert,1978) has shown that inadequate information in this area is associated with drug defaulting.

4. ATTITUDES TOWARDS PSYCHOLOGICAL TREATMENTS FOR HYPERTENSION

Evidence for the popularity of psychological treatments for hypertension was overwhelming. Over 90% of responses indicated a belief that stress and personal problems could affect blood pressure. Similarly, more than 90% of respondents expressed positive attitudes towards the benefits of relaxation and stress management in hypertension therapies. These results reinforced the attitudes reported by preliminary in-depth interview informants on this issue, and several comment-makers remarked on the special importance of these psychological techniques in preventive behaviour.

Obviously, the terminology employed in the questionnaire did not equate directly to the terminology as it is applied in psychological treatment techniques. Also, the adjective 'psychological' was assiduously avoided since it does tend to be confused with 'psychiatric' and carry with it stigmatic connotations. It would be interesting to conduct a similar survey in which the term 'psychological techniques' was used and made explicit, and to compare the results of such a survey with those obtained from the present study.

Nevertheless, the results were encouraging, and whilst it must be reiterated that attitudes do not necessarily predict behaviour, it was suggested that anti-hypertensive treatments which included psychological techniques would be accepted by the public. In addition, given the worry expressed about drug treatments, and the popularity of, and faith in, psychological treatments for hypertension that the survey respondents portrayed; doctors may do well to think hard about the approaches they take in hypertension management.

In summary, it may be said that the main aims of the preliminary study were, basically, met. Study findings indicated considerable public support for the concept of cardiovascular-risk screening by GPs, for all age groups. They also suggested that most people would welcome the opportunity to be screened. This finding of the popularity of preventive medicine and screening checks, concurred with previous findings in the area (eg. O'Brien and Hodes, 1979; Cartwright and Anderson, 1981).

With respect to clinical trials, there was a rather different picture. There was no real consesus, either for or against GP involvement in clinical research. Rather there was a fairly even split between those who were in favour of GPs being engaged in such projects, and those who were against it, or uncertain about the issue. Some identification of potential deterrents to participation, and of sub-groups who might be particularly influenced by these factors, was achieved. However, because of the exploratory nature of the study, such identification was only tentative. Also, due to the paucity of previous work in this field, the generality of these results was difficult to asess.

Therefore, if any real understanding of influencing factors was to be obtained, it was clearly necessary to probe the area more deeply, by a more formal approach. This was pursued in the second study, which will be presented next, in Part III.

PART III

INVESTIGATION OF THE POWER OF FACTORS INFLUENCING PARTICIPATION IN SCREENING AND CLINICAL TRIALS

CHAPTER 1

INTRODUCTION TO THE SECOND STUDY

The second study was intended to serve as a more searching follow-up of the preliminary investigation. Findings from the exploratory study provided some interesting information regarding public attitudes to preventive medicine and GP involvement with clinical research. They also yielded some useful indications of factors that might influence participation in screening and clinical trials for cardio-vascular risk. However, the study was very much a preliminary exploration of the area, designed to investigate the range of variables associated with such behaviours. Predictive equations using these variables were not particularly successful, and it was felt that more understanding of their power could be achieved within the framework of a formal theoretical model.

Also, the initial study sample was relatively small, and weighted in favour of the elderly. This, coupled with the limited extent of previous research in the area, made it difficult to assess the representativeness of the findings.

Therefore, the follow-up study was designed to assess the reliablity of preliminary findings, and to evaluate the relative importance of factors associated with behavioural intention. These objectives were pursued with the aid of an established predicitive model and a larger, more representative, sample.

1. CHOICE OF PREDICTIVE MODEL

Although the preliminary study was not specifically designed to accord with a particular predictive model, the instrument employed did include variables used in the application of Becker and Maiman's (1974) Health Belief Model. Statistical tests employing these variables yielded rather disappointing results in terms of predictive associations and differentiation of group membership. However, it must be conceded that since the preliminary study questionnaire had not been specifically designed for HBM application, the results obtained may not be a fair reflection of the model's utility.

Nevertheless, this was by no means the only reported study in which use of the HBM has failed to account for much of the variance. Calnan and Rutter

(1986) who applied the HBM in their study of Breast Self Examination behaviour, found that, at best, the model accounted for no more than 25% of the variance in their findings. Furthermore, they cited Langlie (1977) as providing evidence that explanation of just a small proportion of the variance appears to be a common finding in studies using the HBM.

Apart from the disppointing results obtained, it was discussed in Part I, section 4.3, that the HBM is not a formal theoretical model, and its stated purpose is purely that of a predictive tool.

Whilst prediction of intended behaviour was one purpose of the second study, another very important purpose was gain deeper understanding of factors associated with intention to participate in screening and clinical trials, and to assess their relative influences. Therefore, the Behavioural Intention Model (BIM), based on the Theory of Reasoned Action, was chosen as the predictive model to be employed in the project.

Issues of importance to the identification of factors influencing participation in screening and clinical trials have already been discussed in considerable detail, and some consideration of the BIM was undertaken in section 4.3.2. However, because of its essential rôle in the second study, the Theory of Reasoned Action and the predictive model it generated, will now be discussed in more detail.

2. THE THEORY OF REASONED ACTION

The Theory of Reasoned Action (TRA) began from "an initial interest in understanding the determinants of traditional attitudes and their relations to behavior."(Ajzen and Fishbein,1980). It was developed over many years and underwent several revisions before it was described in its most recent form in 1980. The TRA relates solely to volitional behaviours and was founded on the assumption that people are rational beings who consider available information and the implications of an action when deciding whether or not to engage in a given behaviour. Considerations of the implications may be explicit or implicit but, according to the theory, they are important influences on behavioural decisions.

The TRA is claimed by its authors to offer a single theoretical framework within which virtually all types of volitional human behaviour can be explained. The purported universality of its application differentiates it from most previous attempts to explain social behaviour, since these tended to assume that there were very different causes for different types

of behaviour and thus restricted themselves to a single behavioural domain (Ajzen and Fishbein 1980).

The diversity of previous behavioural explanations resulted from the variety of causal variables employed, many of which were 'external' variables applicable only to specific behaviours. Apart from behaviour-specific variables such as political party membership and religious affiliations; 'external' variables include sociodemographic characteristics, personality traits, traditional measures of attitudes etc. A common feature of previous measures was a failure to distinguish between beliefs, attitudes, opinions and intentions.

In contrast, Fishbein and Ajzen argued for a clear differentiation of these concepts, and in their formulation of the TRA eschewed a direct influence of 'external' variables on behaviour. Rather, they postulated that prediction and understanding of almost any volitional action can be achieved by the application of limited number of constructs which remain constant across all behavioural domains. Furthermore, although attitudes do represent one of the constructs in the theory, attitudes measured are purely affect reactions and are those pertaining directly to performance of the behaviour. They are not, as is usually the case, attitudes towards the general concept of the relevant object or issue. Beliefs and intentions represent other theory constructs.

The bare bones of the TRA are that behaviour can be predcited from intention to perform the behaviour and that the behavioural intention can be predicted from attitudes and subjective norms. Further to this, it states that attitudes and subjective norms can be understood by examination of behavioural and normative beliefs. Flesh will be added to the bones below.

The TRA states that a person's intention to perform (or not perform) a behaviour is the immediate determinant of that behaviour. However, it is conceded that behaviour is not an inevitable consequence of intention since there is always the possiblity of intervention by some extraneous variable which might prevent the translation of intention into action (an example of this was given in section 5.1- attitude research- where it was suggested that one might feel favourably towards, and indeed intend to take advantage of, infant immunisation, yet be prevented from having one's child immunised by lack of opportunity etc.). Nevertheless, excepting such unforseen events, it is expected that people will behave in accordance with their behavioural intentions. In fact, it is a major tenet of the TRA that the most accurate prediction of a person's behaviour is to be gained from knowledge of that person's intention to perform the behaviour.

According to the theory, behavioural intention is governed by personal and social influences. The personal influence is that of attitudes (affective responses) to the behaviour; the social influence is that of subjective norm - ie individuals' perceptions of the social pressures put on them to perform, or not perform, the action. In general, a behavioural intention may be infered if people evaluate the behaviour positively and believe that their important others would also be in favour of them performing the action.

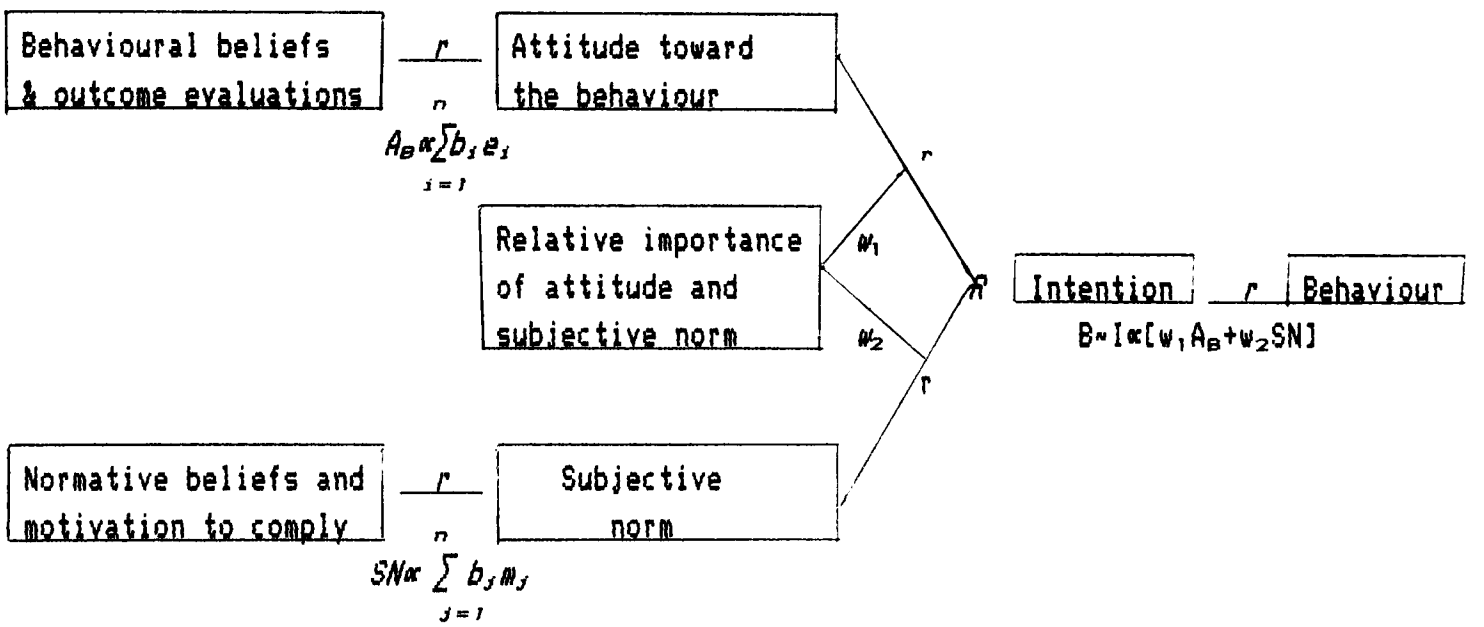
The relative importance of attitudes and subjective norm in determining intention may be expected to vary within individuals and across situations. For example, some people may tend to be more influenced by personal than social influences, whilst for others the tendency may be reversed. Likewise, a person may be almost entirely influenced by personal evaluations when chosing a library book, but be more strongly influenced by perceived social influences when buying party food. The relative weights of these intention determinants can be statistically assessed.

Fishbein and Ajzen argue that for most practical purposes this level of explanation may be sufficient. However, they also acknowledge that it does not offer complete understanding and claim that deeper comprehension of intention may be achieved by examination of the salient beliefs that underlie attitudes and subjective norms. Regarding attitudes, each salient belief is a behavioural belief that links the attitude with an attribute or outcome. The strength of these beliefs - ie. the extent to which the person believes the outcome is a function of the action; and the evaluation of the belief outcomes - ie. how positively or negatively each outcome is regarded; will combine to influence the attitude towards the behaviour. Thus if a person generally believes that a given action will result in outcomes which (s)he regards mainly positively, (s)he may be expected to hold favourable attitudes towards the action.

In the case of subjective norms, the underlying beliefs are normative beliefs -ie beliefs that specific groups or individuals (referents) think that the individual should, or should not perform the action. In this case normative belief strength - the extent to which the person believes each referent would be for or against them performing the action; and the individual's motivation to comply with the referents, combine to influence the subjective norm. Thus if a person believes that their salient referents would be against him or her performing a given action, and if that person is generally motivated to comply with those referents, it may be expected that (s)he would have a negative subjective norm concerning that behaviour - ie. a perception of social pressure not to perform the action.

3. APPLICATION OF THE TRA TO THE BEHAVIOURAL INTENTION MODEL

To recap, the Behavioural Intention Model (BIM) may be represented as:



Where:

B = the behaviour of interest;
I = intention to perform B;
A_B = attitude towards performing B;
SN = subjective norm concerning B;
b_i = the belief that performing B will lead to outcome i;
e_i = the evaluation of outcome i
b_j = the normative belief concerning referent j;
m_j = the person's motivation to comply with referent j;
n = the number of salient beliefs.
r = the correlation coefficient between linked variables
R = the multiple correlation coefficient
w_1 and w_2 reflect the relative importance of A_B and SN *in predicting* I.

As can be seen, all the elements of the theory are represented in the model, but a few further points should be clarified.

Firstly, although the end-point on the model is a behaviour, its authors have proposed that only unforseen circumstances will intervene to prevent the translation of intentions into actions. Therefore, for the majority of practical purposes, a criterion of behavioural intention will suffice (Ajzen and Fishbein, 1980). However, they do also proffer the caution that intentions may change over time and that the greater the time lapse between measures of intention and behaviour, the lower will be the predictive value.

A major contribution of the TRA to the measurement of attitudes for the prediction of behaviour, is its insistance on congruity between attitudes and intentions or behaviours assessed. That is to say, if the criterion behaviour or behavioural intention is the purchase of a brand X tea from shop Y within the next week, the attitude measured must be that towards buying brand X tea from shop Y within the next week. General attitudes towards tea, brand X tea, or even buying brand X tea from somewhere at some stage, are inadequate measures for the prediction of the critrion action. Rather, all measures must be consistent in terms of Action (eg.purchasing) Target (brand X tea) Context (shop Y) and Time (within the next week). This consistency is required not just for the criterion action or intention and attitudes; but it must also apply to measures of subjective norm, behavioural beliefs and normative beliefs. It must also be stressed to the informant that it is evaluations of *his or her* performing of the behaviour which is required.

The model may be applied to prediction and understanding of an individual's behaviour or it may be used to compute predictions of aggregate behaviour. Often the latter use provides better predictions since within a group of people,changes of intention occur both ways and tend to cancel each other out. When individual prediction and understanding of behaviour is sought, the salient beliefs and referents assessed are those peculiar to the individual. When prediction and understanding of aggregate behaviour is the goal, a set of modal salient beliefs must be devised. In either case, the salient beliefs employed in the model must be directly elicited from the individual, or a sample representative of the target population of the study.

Fishbein and Ajzen have described a method for eliciting salient beliefs that is both simple and effective. Informants are asked to list the advantages, disadvantages, and anything else they associate with their performing the criterion action. Each aspect is treated separately so that both positive and negative outcomes are encouraged. The elicitation of modal salient referents is achieved similarly by asking informants if there are any groups or individuals who they think would approve or disapprove of their performing their action, or if there is anyone else who comes to mind when they consider their performing the action in question. The most commonly occuring beliefs and referents are selected for the modal set (full details of the technique for eliciting and devising modal salient beliefs are given in Ajzen & Fishbein's 1980 book).

The assessment of behavioural intention, attitudes and subjective norms entails straightforward measurement on a bipolar seven-point scale with a midpoint of 'Neutral'. Assessment of behavioural and normative

beliefs entail more complex computations, although measurements are mainly as before. Regarding behavioural beliefs, measures are taken of the belief strength and comparable measures are taken of outcome evaluations. For example, given a list of outcomes associated with the behaviour, informants are first asked to rate how likely or unlikely they think it is that their performing the behaviour would lead to each outcome, and secondly to rate how good or bad they believe each of the outcomes to be for them. Strength/evaluation crossproducts are then calculated. Examination of belief strength and outcome evaluation scores aid understanding of why people hold the attitudes they express.

In some applications of the model, it has been found that differential values afford even greater prediction. To obtain differential values, informants are required to perform the same ratings in respect of performing the behaviour and of not performing the behaviour; or for two different behaviours. The values of the latter are subtracted from those of the former and a differential value is achieved.

In the case of normative beliefs a similar two stage process is applied. Here, informants are first asked to rate how favourably or unfavourably they believe each of the referents would regard the informants' performing of the behaviour; and then to rate how motivated (s)he is to comply with each referent's wishes or opinions. Motivation to comply is the only measurement taken on a unipolar scale. Again, examination of these scores affords understanding of the important influences on subjective norm.

The need for understanding is not just academic interest since in almost all cases, understanding of the determinants of behaviour is desired for the purposes of changing behaviour. Discussions of the morality of this position, and of theories of attitude/behavioural change are beyond the scope of this thesis. But, if beliefs do determine attitudes; attitudes determine intention; and intentions determine behaviour, it is clear that ultimately, beliefs will have to be taken into consideration if attitudes and/or behaviours are to be changed.

The previous assertion hints of sinister psychological manipulation, but this need not necessarily be the case. For instance it may be that people hold untrue beliefs about an object or issue that need to be identified before they can be rectified. After all, if people are to make valid decisions based on available information it is essential that the information be true. The BIM would seem to offer a very good method of uncovering influential beliefs.

4. RECENT AMENDMENTS TO THE BEHAVIOURAL INTENTION MODEL

Numerous studies employing the BIM in a variety of behavioural domains have testified to its predictive utility and its qualities of affording understanding of behavioural intention (eg. Bentler & Speckart, 1979 - drug taking behaviour; Budd et al., 1984-seat belt use; Calnan & Rutter, 1986-breast self-examination; Kantola et al. 1982-water conservation intentions; Manstead et al. 1983-mothers infant-feeding intentions and behaviours; Miller et al. 1985-post myocardial infarction regimen adherence; Prestholt et al. 1987-nurse turnover; Schwartz, 1973-helping behaviour; Young & Kent, 1985-camping behaviour). However, even whilst offering support for the basic model, most of the researchers mentioned above have suggested various amendments to the model which they believe would increase its predictive value.

An amendment which has enjoyed considerable support was that of the addition of a 'past behaviour' variable. This was first proposed by Bentler and Speckhart (1979), and given further credence by the results of another study they conducted in 1981. Manstead et al. (1983) employed the extended Bentler & Speckhart version of the BIM in their study. They too found that "the previous behaviour of multiparous mothers explained an independent and significant proportion of variance in their behavioural intentions." The relative importance of attitudinal and normative components were also found to be related to past experience in this study. Other support for the inclusion of past behaviour as a component of the model has been offered by Budd et al. 1984; Budd and Spencer, 1985; Fazio & Zanna, 1981; and Raden, 1985. The evidence offered by these researchers is quite compelling, thus it seems important to assess past experience of a behaviour in future application of the BIM.

Another variable that has been advocated as a valuable addition to the basic model, is that of personal normative belief (eg. Budd et al. 1984,85). This variable was included in the early drafts of the BIM, but was dropped from the model as it was considered to be a reiteration of behavioural intention. Budd and his colleagues cogently argue that personal norm is *not* synonymous with intention, and offer evidence to show that in respect of drinking behaviour at least, inclusion of personal norm increases predictive value. They suggest that the variable be reconceptualised as 'ideal behavioural intention' and reinstated in the BIM. They also maintain that personal norms are more salient to behavioural decisions than subjective norms and suggest that nothing

would be lost from the model if the former, together with measures of past behavior, were included, and the latter omitted.

Interestingly, in an introduction to a new theory of planned action, Ajzen (1985) also indicated that personal normative beliefs should be reinstated in the TRA and BIM. He suggested that personal norms may be formed by other normative beliefs and thus offer adequate measurement of subjective norm on its own. Most researchers using the BIM, do not appear to be quite so disenchanted with the utility of subjective norm, but others (eg. Young & Kent,1985) have questioned the value of the 'motivation to comply' variable. The strength of the arguments for assessment of personal norm, and an intuitive feeling for its importance, led to its inclusion in the reported research model.

One more amendment to be considered here was intimated by Ajzen's Theory of Planned Action mentioned above. This theory asserts that because people can never be absolutely sure that they will be in a position to carry out their intentions, every behaviour is really a goal, the attainment of which is subject to some uncertainty. Ajzen therefore recommends assessment of behavioural expectations and of beliefs pertaining to probabilities and consequences of success and failure regarding attempts to perform the action. This actual amendment was not considered for use in the reported study, but it was decided to assess respondents' expectations that the opportunity for performance of the action would arise.

5. POTENTIAL LIMITATIONS OF THE BIM

Once again, it must be noted that whilst support for the utility of the BIM is plentiful, there is little published evidence of the model receiving application in postal distribution to a general population sample. Ironically perhaps, the major strength of the model - its very thoroughness and specificity - might also be a considerable drawback to such general application. After all, use of the BIM does require repeated assessment of the same variables, as in measurements of belief strength and outcome evaluations. When differential values are obtained, the instrument has to become even more repetitive.

It is relatively easy to obtain full reponses when the instrument is interviewer-administered. Good co-operation may also be expected where it is applied to specialist groups like students (a common study sample source), or expectant mothers where their infant-feeding intentions are of great current importance and interest to them. However, where

responses are not elicited from an interviewer who can retain the informants' interest and compliance; or where the study topic may not be perceived as immediately relevant and important to all those sampled; it may be that the instrument is too repetitive and cumbersome for effective application.

Therefore, because understanding of intended behaviours is not always required of specialist groups; and because research resources will not always stretch to interviewer-administration of questionnaires in large scale surveys; some assessment of the general utility of the BIM would seem warranted.

6. CONSIDERATION OF SAMPLING TECHNIQUES

As stated earlier, as well as by the use of a theoretical model, the second study was also intended to differ from the first in terms of the sampling techniques employed. Although the attitudes and beliefs of the elderly were of special interest in the first study, the unrepresentative age distribution of the sample limited further generalisation of results. Also, the weighted sample may have given a distorted picture of the relevance of age as an associate of certain factors. Thus it was decided that a wider sample, more representative of the national adult population would be the target for the second study.

Another problem with the sampling technique employed in the first study was that of potential bias introduced by personal distribution. Several factors come into play with this approach which may jeopardise representation. Firstly, the sampling pool is limited to those who are out and about in given locations at given times. If the target population is such people, the approach is perfectly adequate. However, if the target population is wider than this, it is an inadequate approach to employ as it disenfranchises all members of the target population who are not in a given locale at a given time.

If distribution is effected in a public place during working hours, many unemployed people will be excluded from the pool. If it is effected at work places or near public transport stations at times when workers are going to or from their jobs, many unemployed and home-based people will be excluded.

A wider sample may be reached by evening 'door-step' canvassing, but some potential respondents will still be missed if they are not at home when the canvasser calls.

In addition, although a random sampling strategy may be planned, and although, in theory, such a strategy may be executed; in practice this is seldom properly achieved. With all the will in the world, some grumpy or harrassed-looking people will be 'missed'. It takes a particularly insensitive canvasser to approach a busy woman laden with shopping, pushing a pram and trying to cope with a lively toddler, just because she happens to be the third person to pass.

On the other hand, if postal distribution is used, unless the addressee has moved, the researcher can be fairly confident that a truly random sample of a given sampling source will at least be canvassed for participation. Postal distribution also has the advantage of being much less costly in terms of personnel time, thus enabling a much larger sample to be reached.

7. STUDY AIMS AND OBJECTIVES

As stated at the begining of this section, the aims of the study related to two main areas. Firstly, they represented a follow-up of the initial study, to both confirm the association of identified factors, and to assess their relative importance. Secondly, they related to the testing of the BIM for the first purpose. Also, the issue of anonymity remained an important aspect of the study and it was considered necessary to assess the value of medical sampling sources - in respect of increased response rates- when anonymity is clearly applied (see again Part I sections 2.4 & 4.4).

The particular aims of the study were:

(1) To assess the reliability of preliminary study findings

(2) To assess the power of factors influencing participation in screening and clinical trials for cardiovascular risk reduction

(3) To identify any socio-demographic variables associated with attitudes beliefs or participatory intentions

(4) To assess the value of the BIM for the prediction and understanding of screening and clinical-trial participation intentions; and its utility for a postal survey of a general public sample

(5) To compare response rates, and responses, from medical and non-medical sampling sources when survey participation and questionnaire completion is anonymous.

CHAPTER 2

METHOD

1. SUMMARY OF METHOD AND SAMPLING STRATEGY NOTE

SUMMARY OF METHOD

A self-completion questionnaire survey was used to explore beliefs, attitudes and intentions regarding participation in screening and clinical trials for cardiovascular risk-reduction.

The questionnaire was comprised of two main sections, relating to screening and clinical trials respectively. Each of these sections incorporated a set of modal salient beliefs and referents elicited from participants in preliminary in-depth interviews. Both sections were prepared in accordance with the Fishbein and Ajzen(1980) prescription for utilisation of the Behavioural Intention Model; but also included a personal normative belief variable, as suggested by Budd et al (1984). A few extra items of particular interest to the Health Maintenance Study were also included, though these are not fully considered in the thesis.

Questionnaire distribution was effected by mail shots to a total of 2000 potential respondents drawn from the electoral roll and the practice lists of four group practices in Northampton. In addition to the standard covering letter and freepost return envelope, a covering letter from the GP was included in the package sent to each potential respondent sampled from practice lists. Obtained data were statistically analysed.

SAMPLING STRATEGY NOTE

Preliminary interview informants were drawn from medical sampling sources primarily because these afforded ease of quota sampling on age/sex bases. Also, the use of a covering letter from GPs helped to authenticate the research and thus help overcome potential problems of gaining admittance into people's homes for interview purposes.

For the main study, Northampton was chosen as the location for the sample population because in addition to the benefits associated with its proximity to the research centre, its population quite closely corresponds to the national profile in terms of sex, age and socio-economic distribution.

The choice of sampling sources reflects several considerations. The first consideration was to reach the widest possible potential sample and the

electoral roll offered the best available source for achieving this end. However, a second consideration was to achieve the greatest possible response rate and postal surveys using this sampling source are often associated with rather low returns. A commonly used sampling source for health related surveys that is associated with very good response rates, is that of general practice lists. Response rates from this source are particularly good when they carry an endorsment by the GP (eg. Smith et al. 1984).

Unfortunately, although this is a well established approach, it does harbour flaws which may diminish the confidence with which results can be held. The main problem posed is potential bias, both from selection of co-operative GPs and from failure to stress respondent anonymity (these problems were discussed in detail in Part I section 2.3 - Volunteer Bias). Nevertheless, in spite of the drawbacks, the lure of a potentially high response rate was strong and it was decided to use the medical source but to try to minimise bias by using several practice lists and emphasising respondent anonymity. It was decided to use the electoral roll too, since responses from this source would clearly be free of influence by GP co-operation and response rates and responses from the two sources could be compared.

Four practices were selected with the help of the registrar of the local Family Practitioner Committee. Six practices from different parts of the town were suggested as possible sources. One refused co-operation and as four agreed, the last practice was not contacted. The electoral roll used was prepared from information gathered 4 months prior to its use.

OUTLINE OF METHOD SECTION

In the following section, details of the methodology employed will be presented as follows:

(1) In-depth Interviews

(2) Development of the Questionnaire

(3) Piloting of Questionnaire

(4) The Main Study Instrument

(5) Sampling Sources and Strategies Employed in the Main study

(6) Distribution of Questionnaire

(7) Statistical Analyses Performed

2. IN-DEPTH INTERVIEWS

In-depth interviews were used to provide the basic information required for the development of an appropriate questionnaire. Two main topics were investigated. These were: (1) participation in health checks for the identification and possible reduction of cardiovascular risk; and (2) participation in clinical trials for cardiovascular risk reduction. Interviews were used to elicit the salient beliefs and referents from 36 informants and all were conducted during the summer of 1987.

2.1 SELECTION OF POTENTIAL INFORMANTS

Because the results of in-depth interviews were to provide the modal salient beliefs and referents used in the questionnaire, it was essential to interview a representative sample of the target population - ie members of the general population aged between 25 and 75 years. The sampling sources used to obtain this representative sample were the age/sex registers of two local group practices, one in Bedford and the other in Leighton Buzzard. Practice lists are well established sampling sources for health-related surveys and the two chosen provided a relatively large sampling pool which included people of all socio-economic groupings.

2.1.1 Sampling Procedure

To ensure adequate coverage from different groups within the target population, selection of potential informants took the form of systematic random sampling within a quota system. The quota system stipulated that equal numbers of potential respondents be drawn from each of 12 age/sex/socio-economic groups which are detailed below in table 1. Eventually, 3 people from each cell served as interview informants. Sampling was effected by the researcher in conjunction with practice managers and receptionists. Full details of the sampling procedure are given in appendix 10.

TABLE 1 SAMPLING CATEGORIES

SOCIO-ECONOMIC GROUPINGS	SEX	
	MALE	FEMALE
Group A 'middle class'	25-44 years	25-44 years
	45-64 years	45-59 years
	65-75 years	60-75 years
Group B 'working class'	25-44 years	25-44 years
	45-64 years	45-59 years
	65-75 years	60-75 years

The three age divisions used in the sampling matrix correspond to those used by the Office of Population Censuses and Surveys (OPCS) for the adult population over 25. The two broad socio-economic groupings crudely represent 'middle class' and 'working class', with Group A incorporating groups I, II, and III of the Registrar General's classification scheme; and Group B groups IV and V of the same system. These broad categories were chosen because heart attacks and strokes are more prevalent amongst the lower socio-economic groups, particularly the unskilled manual workers (eg. Townsend & Davidson, 1982; Whitehead, 1988), so it was considered possible that this may be reflected in differential attitudes and beliefs relating to preventive health behaviours. People not currently employed were categorised according to their usual occupation, or where applicable, that of the head of the household.

The sampling sources used did not provide details of occupation so initial determination of socio-economic groupings were based largely upon addresses and the receptionists' knowledge of individual patients. Accurate assessment of this variable could be made only at time of interview, but the address/receptionist estimates proved to be remarkably good guidelines.

Finally, when selection was complete the full list of potential informants was submitted to the practice doctors for vetting, to avoid sending canvassing letters to anyone who might find such a letter insensitive. Exclusion criteria were:

1. Known current illness
2. Known recent bereavement
3. Known recent experience of a heart attack or stroke suffered by self, spouse or other close family member
4. Language difficulties
5. Psychological problems.

2.1.2 Canvassing Of Interviewees

Canvassing of informants raised several ethical/methodological issues. Firstly, potential informants had a right to know the sampling source from which they were drawn, which meant that they were also entitled to an endorsement of the study and a reassurance of medical confidentiality from the GP. However, another major consideration in the canvassing of informants was that they should not be alarmed by the canvassing letter, nor experience any feelings of coercion to take part if they did not really wish to participate.

The experiences of the preliminary study showed that many people place great importance on a good relationship with their GP and would not want to jeopardise this relationship in any way - perhaps by refusing a request to participate in a research project. Apart from the ethical issues involved, there are also methodological implications since if people feel obliged to take part in order to please their doctor, they may also feel obliged to give similarly influenced responses (see again Part I section 2).

It was essential therefore, that the canvassing approach acknowledge the involvement of the GP to some extent, whilst also giving reassurance that selection was not related to medical history; and that personal decisions re participation would remain unknown to the GP. Thus, it was decided that two letters should be sent together. The first letter was a straightforward canvassing letter from the researcher and the second letter was a covering note from the GP.

The canvassing letter outlined the purpose and format of the interviews and reported the sampling source. It was also made clear to recipients that they had been selected at random and that their acceptance or refusal to be interviewed would not be made known to the GP. The GP's covering note was basically used to authenticate the researcher's letter and to reassure potential informants that medical confidentiality had

been preserved. It also reiterated the GPs' non-involvement with the research, though, due to an additional line added by the GP, gave some endorsement to the study. In order to participate in interviews, informants had to return a 'consent to contact' form, direct to the researcher, in the freepost envelope provided (copies of both letters are given in appendix 11).

2.2 INTERVIEWING PROCEDURE

On receipt of consent forms, volunteers were telephoned by the researcher to arrange interview appointments. All interviews were carried out in the informants' own homes and each interview lasted for approximately 1 hour. In every case a standard introduction was given and a standard interview schedule used. This conformed to that prescribed by Ajzen and Fishbein (1980), which was described in Part III, Chapter 1, section 3 (see appendix 12). At the begining of each interview informants were asked if they would object to the discussion being taped so that the interview could procede smoothly and all information be recorded. Informants were assured that the tape would be erased as soon as a transcript had been made and this is exactly what occured. Only 9 of the 36 interviewees expressed a preference for the tape not to be used and their wishes were readily observed.

2.3 IN-DEPTH INTERVIEW RESULTS

2.3.1 Response To Canvassing Letters

The first set of canvassing letters were sent to a sample drawn from just one of the group practices, and the initial response rate was disappointingly low (31.8%). In addition to the paucity of responses, there was a bias in favour of people from the higher socio-economic groups. Discussion with interviewees showed that there was some confusion as to the purpose of the interviews, and where they would be conducted. The confusion about purpose was evident from respondents who began the interview by stating that they did not wish to take part in the testing of any medicines. Confusion about interview location was due to an oversight in the preparation of the letter which bore an Oxford address (that of the HMS) and did not specify that interviews would be conducted in informants' own homes. Accordingly, the canvassing letter was amended to rectify these problems and another sample was obtained.

This time both practice lists were used. However, in spite of the increased sampling pool and the amendments to the canvassing letter, response rates to the second canvassing were not greatly improved and the problem of bias remained. Even after the second canvassing there was inadequate representation of 'working class' males so three men from the lower socio-economic groups were finally canvassed by the personal approach of a project supervisor who is also a GP.

The continued poor response to interview requests suggested that the original reluctance was not due entirely to confusion about factors mentioned, but perhaps also due to lack of interest, or some suspicion as to the real purpose of the interview.

2.3.2 Analysis of Interview Responses

In spite of the apparent unattractiveness of interview participation, all informants were very ready to give full vent to their feelings and opinions during the interviews. Both positive and negative comments were readily forthcoming and informants seemed very pleased with the opportunity to express their feelings about both screening checks and clinical trials.

After each interview, a transcript was made of the tape recording and notes were made of all beliefs expressed (for non-taped interviews full written notes were taken at the time). Subsequent examination of the data revealed considerable homogeneity of beliefs, both within sampling-category cells, and between them. There were, of course, exceptions to the general rule, but these were not found to be exclusively related to any particular category cell, so it was deemed unnecessary to extend the interview stage to more informants. A breakdown of elicited beliefs is given in appendix 13.

Finally, data from all respondents were pooled and, as suggested by Ajzen and Fishbein (1980), sets of modal salient beliefs were derived from the 10-12 most commonly expressed items. The first set pertained to participation in health checks to identify people at risk of a heart attack or stroke; the second set to participation in clinical trials. Corresponding sets of modal salient referents were similarly obtained.

3. DEVELOPMENT OF THE QUESTIONNAIRE

The primary consideration was to design an instrument,or instruments, that would incorporate the modal salient beliefs and referents elicited from in-depth interviews; and enable effective utilisation of the BIM for the prediction and understanding of intention to participate in screening and clinical trials for cardiovascular risk reduction. It was also intended to collect a little additional information which would be of value to the HMS.

Because a large sample was required, and because of possible contamination of responses by 'experimenter effects', it was decided that the questionnaire should be a self-completion instrument. Therefore, the questionnaire had to be easy to understand and to complete. It was also intended that the instrument should be as short as possible.

However, in the introduction to the second study it was stated that some researchers have found differential measures of component variables to produce better predictive equations than straightforward single measures. Since the objective was to achieve good predictions of behavioural intention, it seemed appropriate to gather data that could provide differential values. Unfortunately, this approach entailed a lengthening of the questionnaire, which might have detrimental effects on both response rates and quality of responses. Nevertheless, it was decided to develop the pilot questionnaire in this format and to assess its acceptance by pilot studies.

Another major problem to be addressed in the early stages of development was whether or not it would be feasible to use a single questionnaire instrument for the collection of all required data.

Clearly, participation in screening and participation in clinical trials represent two distinct actions, each of which would require an independent measuring instument. But, because of the study's association with the HMS, in which participation in screening and clinical trials were interlinked; it was considered preferable, if possible, to obtain measures pertaining to both activities from the same individuals. Therefore, the best way of achieving this end had to be determined. Three main options were considered. These were:

(1) Send potential respondents one of the questionnaires and ask at the end if they would be willing to complete the other one. Respondents who completed the first questionnaire and responded positively to the request could then be sent the follow up instrument.

(2) Send potential respondents both questionnaires together.

(3) Combine the two instruments in a single questionnaire format.

The first option was quickly dismissed on several grounds. Firstly such an approach would rule out any possibility of truly anonymous completion. This was a major drawback since true anonymity was considered to be important, especially for respondents selected from medical sampling sources. The reason for this has already been outlined and relates to ethical and methodological concerns that non-anonymous participation in the study, may yield responses that are influenced by a perceived possibility of repondent identification by the GP. Also, it posed a problem of what to do with responses from people who completed the first questionnaire, but did not wish to complete the second; or what to do about people who did not complete the first questionnaire but expressed a willingness to complete the second one. Lastly such an approach would be very time-consuming and expensive in terms of stationary and postage required.

The second option posed almost as many problems as the first. Intuitively, it seemed that this approach was both cumbersome and very vulnerable to either no response at all or to return of only one questionnaire. Also, if anonymity was preserved, it was considered possible that the two questionnaires might be completed by different members of a household.

This left the third option which would allow anonymity and which seemed more likely to elicit completion by a single individual, albeit not necessarily the one to whom it was originally addressed. However, the main drawback of this approach was that it would further increase the length of the questionnaire. Nevertheless, research has indicated that questionnaire length may not decrease response rates (see again Part I section 6.1) and this option was considered to be the best one available. Therefore it was decided to produce a single instrument combining measurements for both activities and to pilot this approach first. If piloting showed the dual purpose questionnaire to be too long or too cumbersome, separate instruments would be prepared.

4. PILOTING OF QUESTIONNAIRE

Piloting of the questionnaire represented a major part of the study and consisted of several stages.

The initial version of the questionnaire was piloted in September 1987. As well as measuring intentions, attitudes, subjective norms, behavioural and normative beliefs; this version also included personal normative variables and several questions relating to past behaviour of relevance to study topics.

Six people who had agreed to initial interviews, but whose inclusion would have exceeded cell requirements, were invited to take part in the pilot study instead. All six agreed, and four more people, known personally to the researcher, also participated. The age range of this sample was 23 to 71 years and it included both manual and non-manual workers. Questionnaires were sent to informants for self-completion, and follow-up interviews were conducted in their homes to discuss the questionnaire and any problems encountered. The major findings from this phase were the identification of a few awkwardly phrased items; recognition of 'unsure' as a more appropriate midpoint than 'neutral' in the BIM's 7 point scale; and the need for inclusion of a 'not applicable' category in the normative beliefs section.

After appropriate amendments had been made, the questionnaire was piloted by personal distribution of questionnaires to a random selection of the public within Milton Keynes Shopping Centre. The procedure used was identical to that employed in he distribution of questionnaires for the preliminary study (see again Part II, Chapter 2 sections 5 & 6).

For this stage two return addresses were used. One was the address of the HMS in Oxford and the other was the Cranfield Applied Psychology Unit address. The two addresses were used because it was found in Study One that there was some suspicion of 'psychology', and it was felt people might be more inclined to respond to a survey from the Radcliffe Infirmary which is a locally respected institution. If the anticipated superiority of response rate from 'Oxford instruments' was realised, the main study would employ this address. If not, the Cranfield address would be used as it would be more convenient to the researcher.

Compared to the response rate achieved in the previous study, the response rate from this piloting session was poor. Just 39.4% of distributed questionnaires were returned, with no difference in responses from Oxford (39%) and Cranfield (39.7%) return addresses. Given that the

survey topic and distribution procedure were identical to those of Study One; and that the site used was that which had provided the best returns from Study One; it was decided that the instrument itself was probably to blame for low response rates. Support for this inference was found in comments made on returned questionnaires. Four respondents stated that the questionnaire was repetitive and rather boring, and they had actually completed and returned the instument. So, it did not seem unreasonable to assume that others had failed to respond for this reason.

Accordingly, revision of the instrument was undertaken and changes to both the format, and distribution of the questionnaire were considered. Firstly, in an attempt to overcome problems of repetition and boredom, the screening and clinical trial sections of the questionnaire were separated to become independent instruments. These two questionnaires were then piloted as before, on a random sample of people canvassed in the Milton Keynes shopping centre. All return envelopes bore the Cranfield address.

The response rates for both questionnaires were even lower than that achieved for the initial dual-purpose instrument - 37% for the clinical trial instrument and 28% for screening. This low response rate caused particular concern, since it was planned to distribute main study instruments by post, and it has been suggested that response rates are greater from personal, than mail shot, distribution (eg. Bellizzi and Hite, 1986). Although postal distribution had been selected to overcome problems associated with the personal approach (see again Chapter 1 section 6 above), it was also important to obtain a reasonable response rate. Thus it was decided to test the effectiveness of postal distribution to a random sample drawn from the electoral roll.

Three versions of the questionnaire were piloted in this way.

(1) The full version - incorporating both screening and clinical trial sections
(2) Screening only
(3) Clinical Trials only

There was little difference in response rates for the three versions - 30% for the full version; 27% for screening; and 32% for clinical trials. Although the response rate from the electoral roll was slightly lower than that of the personal approach method, the difference was slight. Furthermore, postal distribution yielded a more representative response in terms of age/sex distributions. Therefore, it was decided that the full version of the questionnaire would be used in the main study, and that distribution of the instrument would be effected by post.

Before the final instrument was designed some preliminary statistics were performed on pilot study data. It was found that differential measures gave no better predictive values than straightforward measures. Therefore, the questionnaire was refined and shortened by the removal of items that had been included to afford calculation of differential values. It was also found that there was much 'missing data' for the items relating to past behaviour, so these items too were refined.

In this way problems of repetition were reduced and improved response rates were anticipated. Another cause for optimism regarding subsequent response rate was given by the fact that much of the piloting had been undertaken between November and January when people may have been too preoccupied with seasonal activities to give attention to the survey.

5. THE QUESTIONNAIRE

The questionnaire (appendix 14) was comprised of four main sections. The first and last sections related to demographic and health details respectively, whilst the two centre sections provided the data for testing the theory of reasoned action. Section 2 pertained to participatation in screening, and section 3 to participation in clinical trials, both specifically for cardiovascular risk reduction.

5.1 SECTION ONE - SOCIO-DEMOGRAPHIC DETAILS (PAGE 1)

The first section consisted of 8 items which provided information about respondents' age, sex, marital status, whether or not they lived alone, whether or not they had children, and, employment details. The latter were used to determine crude estimates of socio-economic status. Data obtained from this section were used to provide a demographic profile of the sample and to enable comparison of various subgroups of the population.

5.2 SECTION TWO - INTENTIONS, ATTITUDES, BELIEFS AND NORMS PERTAINING TO PARTICIPATION IN SCREENING (PAGES 2-5).

All items in this section related to participation in screening for the identifcation of cardiovascular risk, and the format complied with that prescribed by Fishbein. Answer options were comprised of a 7 point scale but Fishbein's 'neutral' centre point option was replaced by an 'unsure' option as early piloting had shown this to be more appropriate. Thus the range of answer options available for measurement of intention or belief strength were: 'Very Likely', 'Quite Likely', 'Slightly Likely', 'Not Sure', 'Slightly Unlikely', 'Quite Unlikely', 'Very Unlikely'. Answer options for attitudes and belief evaluations similarly ranged from 'Very Good' to 'Very Bad' with the same 'Not Sure' midpoint.

PAGE 2

Item 1 was a direct elicitation of intention to participate in screening for cardiovascular risk, if such an opportunuity was presented. **Item 2** represented a measure of general attitude, **item 3** a measure of attitude to personal participation, and **items 4 and 5** measures of social and personal norms respectively. The final item on this page, **item 6**, was a measure of respondents' perceived likelihood of a screening offer being made. Although Fishbein's model does not include items 5 and 6, Budd (1984) and others have demonstrated the importance of item 5 to behavioural prediction and Ajzen's(1985) paper indicates the wisdom of ascertaining item 6, especially where intentions, rather than behavioural outcomes are the final measures.

PAGE 3

The items on page 3 represented the modal salient belief set obtained from in-depth interview responses. Measures of belief strength for each item were obtained from this page.

Item 7 represented the belief that participation in screening would give a definite indication of the presence or absence of cardiovascular risk. **Items 8 to 11** were subsidiary to item 7 in that they represented beliefs associated with risk assessment. **Item 8** relates to being given a frank diagnosis; **item 9** the belief that a 'good result' would offer peace of mind; **item 10** the belief that 'forewarned is forearmed' ie that if a person knows (s)he is at risk (s)he can take preventive measures; and **item 11** that the screening procedure would include information about the best preventive measures to take.

Items 12 and 13 are really two sides of the same coin in that they both represent the belief that particpation in screening would help avoid later infirmity. Item 12 was a positive statement of this belief whilst

13 was a negative approach. Both were included because both were put forward by preliminary interviewees and highlighted the fact that some people would be encouraged to attend screenings by the hope of maintaining current good health whilst others would be more inclined to participate for fear of what might happen if they didn't. As one informant succinctly put it,' There are different sorts of donkeys - I'm the sort who responds best to the stick, not the carrot.'

There is some controversy in the literature as to the benefits of fear arousal in health promotion messages (eg. Leventhal,1965; McGuire, 1968). Some (eg. Leventhal 1973; Kirscht and Haefner, 1973) have suggested that threat may be a useful adjunct to health promotion campaigns. Others (eg. Kasl, 1978) have argued that threat may be less effective than positive appeals to participate in health screening. By using both items it was intended to assess which approach would be most effective for encouraging participation in cardivascular risk reduction programmes.

Items 15-18, represent beliefs about lifestyle changes ie that participation in screening would be accompanied by a directive to stop smoking, drinking, change diet, or take up exercise. The preceding item, **14**, was a straightforward belief that doctors are inclined to 'lecture' patients. Finally, **item 19** was the belief that participation in screening and confrontation with current bad habits would act as a spur to more healthy living habits.

PAGE 4

Items on this page were used to assess respondent's evaluation of each belief outcome and they correspond exactly to those set out on page 3.

PAGE 5

The second half of page 5 was the final part of the Fishbein assessment instrument. It represents the modal salient referents elicited from interview informants and comprises both normative beliefs and the motivation to comply with individual referents. The final item on the page provides a measure of compliance with the individual's own personal norms. Answer opotions for normative beliefs were grouped under two headings ie 'In Favour' and 'Against'. Under each of these headings were the options: Very Much, Quite a Lot, A Little. The two groupings were separated by a 'Not Sure' option and a further option of 'Doesn't Apply' was also provided. Motivation to comply was measured on a unipolar 4 point scale of Very Much, Quite a Lot, A Little, Not At All. Again a 'Doesn't Apply' option was provided. Measures of self compliance were guaged from the answer options: Almost Always, Most of the Time, Some of the Time, Almost Never.

The first part of page 5 was not directly related to the Fishbein assessment, but it was included because of its relevance to the HMS. In this section assessment was made of how important people perceived various cardiovascular risk factors to be. This information was required because it was clear from the interview data that some people do not really believe some risk factors to be very 'risky' at all. Clearly, if people do not believe that a risk factor is a risk factor, they cannot be expected to respond to advice to address a particular problem. Therefore it was considered important to make some evaluation of people's perception of risk factors so that any common misconceptions might be identified and given greater emphasis in health promotion.

5.3 SECTION THREE - INTENTIONS, ATTITUDES BELIEFS AND NORMS PERTAINING TO PARTICIPATION IN CLINICAL TRIALS (PAGES 6-12).

Section three was really a repetition of section two except that it related to clinical trials rather than screening and necessitated a more complex assessment of intentions and attitudes. It was evident from preliminary interviews that most informants differentiated between 'brand new pills' and other already established pills, so the questionnaire had to allow for this. It was also apparent that, unlike screening, people did not regard clinical trial participation from a single perspective. Rather, informants stated that participation would depend upon a variety of circumstances including their own state of health at the time, their perception of the value of testing a given drug, and the attitude of the soliciting doctor.

Accordingly, although a final overall measure of intention was obtained, the first part of this section was designed to acknowldege the complex nature of participatory intention and to give people the opportunity to express their intentions under differing circumstances.

PAGES 6 - 8

In these pages, identical answer options were provided for both 'new pills' and 'other pills'. Both ranged on a 7 point scale from Very Likely to Very Unlikely with Not Sure as the midpoint. The attitude answer options similarly ranged from Very Likely to Very Unlikely for outcome measures and Very Good to Very Bad for evaluations. All participatory scenarios assessed were reported by interview informants and all refered to participation in clinical trials for cardiovascular risk reduction.

Items 1 to 3 assessed intention to participate in clinical trials if certain health conditions applied. These were: 1-if the respondent was in severe health danger and the trial drugs were a last resort; 2-if the

respondent was at high risk of a heart attack or stroke; 3-if the respondent was at *any* extra risk of a heart attack or stroke. **Item 4** assessed intention to participate in order to benefit others and **item 5** related to participation if the respondent was already on other medication. **Item 6** was used to measure requirements for information prior to participation whilst **item 7** measured the probablity of participatory consent being nulified by non-compliance.

Items 8 and 9 both asked for an overall intention to participate in clinical trials. **8** measured intention to agree to participation and **9** measured intention to refuse to participate. The two measures were obtained so that a differential value for participatory intention could be computed as pilot results had shown this to be the only variable to be more sensitive in differential than straightforward measures. **Items 10 to 12** measured attitude, social norms and personal norms respectively, whilst **item 13** measured respondents' perceived likelihood that their doctor would ask them to take part in clinical trials.

PAGE 9

Page 9 was comprised of 11 items which were used to gain measures of belief strength. In this section there was no differentiation between 'new pills' and 'other pills' because interview elicitation of beliefs had indicated that it was only at the stage of deciding whether or not to take the pills that the newness of the drugs exerted an influence. Once taking pills, the same concerns applied however new or well established they were. As before, measurement was on a 'Very Likely' to 'Very Unlikely' 7 point scale.

The first two items on page 9, items **14 and 15,** respectively assessed the beliefs that the respondent's doctor would give her/him all the information (s)he wanted about the trial study, and about the pills being tested. **Item 16** measured the extent to which people believed that they could ask for any information they wanted. **Items 17, 18 and 22** related to beliefs about side effects and **items 19 and 20** related to beliefs about contributing to knowledge that might benefit self or others. **Item 21** measured the belief that to take part in clinical trials was to serve as a 'guinea pig'. The last belief assessed, **item 24**, pertained to worry that participation in clinical trials might result in discontinuation of current effective medication. This belief was not, in fact, expressed by many interviewees, but it was mentioned by a few and as it was found to be a major worry for people who took part in study one, its inclusion in this study seemed justified.

PAGE 10

Items on this page were used to assess the outcome evaluation of beliefs and as before, they corresponded exactly to those on the previous page.

PAGE 11

As with the first half of page 5, the items on page 11 were not required for the theory of reasoned action model. However, again they did elicit data of relevance to the HMS, so they were included. The 8 items on this page were all taken from interview responses and they related to conditions which might influence non-compliance with prescribed drug regimens.

PAGE 12

The final part of section 3 equated to the second half of page 5. The same format was used to assess normative beliefs and motivations to comply, but in this case normative beliefs were measured for both participation in trials of new drugs and in trials of established drugs.

5.4 SECTION FOUR - HEALTH DETAILS (PAGES 13 and 14)

The last section of the questionnaire elicited information about personal health and past experiences of screening tests and clinical trials. These measures were obtained to enable sub-group comparisons of intentions, attitudes and beliefs; and to give an indication of both the extent to which people would like regular blood pressure and cholesterol tests and by whom they would prefer them to be done. This information was of specific interest to the HMS.

Different coloured papers were used to facilitate identification of respondents from the various sampling sources.

6. THE MAIN STUDY

6.1 SAMPLING SOURCES

Two main sampling sources were used for the main study ie. - the practice lists of four Northampton general practices; and the Northampton electoral roll. The rational for using these sources was given at the begining of this section in sampling strategy note.

The four practices which took part in the study were selected with the help of the Family Practioner Committee registrar, who chose practices from different areas of Northampton to give a representation of all types.

The first sampling practice was a very new one, in a new development area of south-west Northampton. Its catchment area included lots of expensive modern housing, and several outlying villages to the south and west of the town. At the time of sampling it consisted of just 2 partners.

The second practice was a well established one situated in the North of the town and it had a well mixed practice list of people from both local authority and private housing. Five doctors practiced in this group.

Practice no. 3 was part of a very large health centre complex of several group practices located in another fairly new development area. However, this area had a much greater proportion of local authority housing within its catchment area and was to the east of Northampton. It was also considerably larger, accomodating 4 partners.

Practice No. 4 was a well established practice in the middle of the town with a well mixed catchment area which included flats and hostels as well as local authority and private housing. The group was comprised of 5 partners.

The electoral roll used was a draft version of the latest edition. It was issued in February 1988, having been complied from information obtained in October 1987. Sampling took place in February and March 1988.

6.2 SAMPLING STRATEGY

In each medical practice 250 potential respondents were drawn from the sampling pool by systematic random sampling. At practices 1 and 2, sampling was effected from age/sex registers. At practices 3 and 4 the notes-stacks were used. Systematic random sampling was also employed in the selection of potential respondents from the electoral roll (see appendix 15 for details of the sampling stategies used).

7. QUESTIONNAIRE DISTRIBUTION

Questionnaires were distributed via mail shots during March and April 1988. For potential respondents drawn from medical sampling sources, a covering letter from the GP was also included. This covering letter was the same for all practices, with each bearing the appropriate letter headings and being signed by one or more of the partners (see appendix 16 for a copy of the letter).

A freepost return envelope was included with every questionnaire sent.

8. STATISTICAL ANALYSIS

Returned questionnaires were coded for statistical analysis and submitted to the following statistical tests:

(1) Frequency counts and chi square 'goodness of fit' tests

(2) Multiple regression analyses

(3) T-tests

(4) Discriminant function analyses

(5) Chi square crosstabulation tests.

CHAPTER 3

RESULTS

The data collected for study two were almost entirely quantative, although a few respondents did add some comments to their questionnaires.

Data were submitted to analyses in accordance with study aims and results will be presented as follows:-

(1) Details of response rates and sample characteristics

(2) Summaries of frequency counts pertaining to intention, attitudes, and beliefs regarding (a) participation in screening for cardiovascular risk; (b) participation in clinical trials for cardiovascular risk - reduction.

(3) Correlations and Multiple Regression Analysis to test the predictive associations described by the Behavioural Intention Model(BIM)

(4) T-tests to identify beliefs that differentiate intending participants from intending non-participants

(5) Discriminant Function Analysis to test the differentiation of potential participant and non-participant groups

(6) T-tests and Chi Square Crosstabulations to test for differences between sample sub-groups.

(7) A summary of comments appended to questionnaires

(8) Summary of results

1. RESPONSE RATES AND RESPONDENTS

Of the 2000 questionnaires sent out (1000 each from electoral roll and medical sampling sources), 695 were returned in time for analysis.

Taking into account undelivered instruments, the overall response rate was 36.2%. There were 23 'return-to-senders' from the electoral roll sample and 57 from the medical sample, thus yielding individual response rates of 33% and 39.4% respectively. This represented a statistically significant difference(χ^2=8.68 df=1 p=<.01). However, of the whole sample, 323 respondents came from the electoral roll and 372 from medical sampling sources (46.5% & 53.5% respectively). These proportions were not significantly different (χ^2=3.31 df=1 p= >.05).

RESPONDENT CHARACTERISTICS

TABLE 1 Sex and Age Profile of the Sample

SEX		AGE GROUPS		
Male	Female	18-44	45-Pensionable Age(♀ 60; ♂ 65)	Pensionable Age and Over
47,3%	52,7%	56,6%	26%	17%

Sex distribution of the sample was very similar to that observed in Northampton as a whole, but there was a significant difference in the distribution of ages between the obtained sample and the adult population of Northampton (χ^2=10.06 df=2 p<.01.). The difference was described by an under-representation of people in the oldest age group (17% of the sample, against 22% of the Northampton adult population - comparison source OPCS Census 1981).

Within the sample, there were fewer young men and more middle-aged men than would be expected by chance; with correspondingly more young, and fewer middle-aged, women. Within the oldest age group, sex distributions were more or less as would be expected (see table 2).

TABLE 2 Summary of Crosstabulations Sex (1=Male; 2=Female) by Age Groups

SEX		AGE GROUPS 18-44	45-Pens.	Pens+	ROW TOT
1	Observed	172	102	53	327
	Expected	185,7	85,5	55,8	(47,3%)
2	Observed	221	79	65	365
	Expected	207,3	95,5	62,2	(52,7%)
	COL. TOT	393	181	118	692

χ^2 = 8,19 df=2 p=,016 λ=,070 (with sex dependent)

TABLE 3 Civil Status and Cohabitation Profile of the Sample

CIVIL STATUS				LIVING ALONE/WITH OTHERS	
Single	Married/ Cohabiting	Divorced/ Separated	Widowed	Alone	With Others
15,4%	74,5%	5,8%	4,2%	12,2%	86,6%

These figures conform quite well to those provided by the OPCS General Household Survey of 1985, though there may be a slight under-representation of single and widowed people.

TABLE 4 Current Employment Status and Usual Occupation Profile of the Sample

CURRENT EMPLOYMENT						USUAL OCCUPATIONS		
Self Employed	Full Time	Part Time	Unemployed	Retired	Other-eg Housewife	Non-Manual (I-IIIa)	Manual (IIIb-V)	(VI)
6,6%	46,5%	14,2%	3,5%	15%	14,2%	58,9%	32,5%	7,2%

The proportion of unemployed and retired respondents (18.5%) corresponded quite closely to the proportion of 'economically inactive' household heads in Northampton (20%). However, the distribution of social classes I to V in the sample, was very different to that obtaining for Northampton as a whole.

When 'armed forces' and 'economically inactive' are removed from the figures for the Northampton population, the resultant proportions of non-manual(classes I II & IIIa) and manual (classes IIIb, IV & V) occupations of household heads are 40.8% and 59.2% respectively. 635 respondents (91%) indicated a usual occupation within classes I to V. Of these, 64.4% were non-manual and 35.6% manual. This difference in social class distribution between Northampton as a whole and the study sample, was highly significant(χ^2 = 139 df = 1 p<.001) with an obvious under-representation of manual workers in the sample (OPCS Census, 1981).

TABLE 5 Reported Health Status & Consciousness and Cardiovascular Risk Behaviour

Current health Excellent or Good	Very or Quite Interested in General health	Very or Quite Careful re Healthy diet	Current Smoker	Drinks Alcohol At Least Once per Week	No Regular Exercise
80,3%	90%	61,8%	29,4%	45,1%	54%

According to the OPCS General Household Survey for 1984, 31% of the population in this area are current smokers. Alcohol consumption was less easy to compare with GHS figures, but a survey of knowledge attitudes and behaviour relating to heart disease (Lifestyle and Heart Disease) conducted in 1986, found 57% to drink alcohol at least once a week; and 46% to take no regular exercise.

TABLE 6 Personal and Family History of Cardiovascular Disease

PERSONAL HISTORY		FAMILY HISTORY	
Heart Trouble	Hypertension	Heart Attack	Stroke
8,1%	15%	34,5%	17,7%

2. FREQUENCIES

Frequencies of reponses to each questionnaire item are detailed on the questionnaire in appendix 14)

SCREENING

In respect of almost all items relating to participation in screening for cardio-vascular risk, there was a remarkable consensus of responses emitted by the sample. Therefore, only positive responses will be summarised below. Uncertain and negative responses can be seen in appendix 14.

TABLE 7 Percentages of Informants Indicating Positive Responses to Intention, Attitudes, Subjective and Personal Norms re Participation in CVD Screening.

VARIABLE	POSITIVE RESPONSES			
	Very	Quite	Slight	Total
Participatory Intention	54,2	22,3	14,0	90,5
Attitude to General Concept	70,8	21,4	4,2	96,4
Attitude to Personal Participation	62,3	25,2	6,0	93,5
Subjective Norm	48,3	30,5	11,1	89,9
Personal Norm	55,7	31,2	9,1	96,0

However, just 29,7% indicated that they thought there was some likelihood that their GP would offer a screening check for CVD within the next year.

TABLE 8 Percentages of Informants Indicating Positive Beliefs that Items Would Be Associated With Paticipation in CVD Screening

OUTCOME BELIEF	POSITIVE LIKELIHOOD			
	Very	Quite	Slight	Total
Could take preventive measures if at risk	69,5	20,6	4,5	94,6
Would be told best preventive measures to take	64,0	24,7	4,9	93,6
Would improve chances of staying fit & healthy longer	57,4	28,3	7,9	93,6
Get peace of mind if got the 'all clear'	73,2	16,3	3,3	92,8
Would lessen chances of becoming infirm in later years	42,0	30,8	10,5	83,3
Would definitely find out whether or not at CVD risk	36,8	38,1	7,8	82,7
Would spur me to more healthy style of living	34,5	32,9	15,1	82,5
Would get a lecture from the doctor	21,2	21,7	11,2	54,1

In addition 94.5% stated that they would want to be told 'straight' if at cardiovascular risk, with 80.4% giving the strongest positive response.

TABLE 9 Percentages of Informants Indicating Positive Evaluations of Outcome Beliefs Associated With Paticipation in CVD Screening

OUTCOME BELIEF	POSITIVE EVALUATION			
	Very	Quite	Slight	Total
Being told best preventive measures to take	71,5	19,3	4,5	95,3
Improving chances of staying fit & healthy longer	69,1	20,3	5,9	95,3
Being able to take preventive measures if at risk	68,2	21,6	5,2	95,0
Having peace of mind by getting the 'all clear'	74,7	14,8	3,7	93,2
Lessening chance of becoming infirm in later years	63,5	21,2	4,2	88,9
Finding out whether or not at CVD risk	59,9	21,6	4,6	86,1
Being spurred on to more healthy style of living	37,7	30,8	12,8	81,3
Getting a lecture from the doctor	24,7	22,6	15,1	62,4

In addition, 89.9% stated that it would be good for them to be told 'straight' if they were at cardiovascular risk, with 70.11% giving the strongest positive response.

Other outcome beliefs tested in the study related to lifestyle items of smoking, drinking, diet and exercise. 67.2% of the sample claimed to be non-smokers, and 60.9% claimed to be non/rare drinkers. 25.6% claimed to be 'healthy eaters'; and 27.8% regular exercisers. Of the remaining respondents, most indicated beliefs that screening would entail being told to change lifestyle habits and most evaluated such advice positively.

TABLE 10 Percentages of Respondents Indicating Beliefs That Advised Lifestyle Changes Would be an Outcome of Screening Participation (non-smoker/drinkers and 'healthy eaters' and regular exercisers excluded)

ADVISED LIFESTYLE CHANGE	POSITIVE RESPONSES			
	Very	Quite	Slightly	Total
Be told to give up smoking	74,8	16,8	3,7	95,3
Take-up exercise	29,4	37,4	15,0	81,8
Change diet	31,2	28,7	15,2	75,1
Reduce drinking	27,0	26,2	12,3	65,5

TABLE 11 Percentages of Respondents (as above) Indicating Positive Outcome Evaluations re Lifestyle Changes

ADVISED LIFESTYLE CHANGE	POSITIVE RESPONSES			
	Very	Quite	Slightly	Total
Being told to give up smoking	37,8	18,7	10,7	67,2
Take-up exercise	27,3	34,3	18,8	80,4
Change diet	28,0	30,2	16,1	74,3
Reduce drinking	20,7	19,0	17,3	57,0

93% of respondents reported experience of blood pressure tests, but only 17% reported experience of a blood cholesterol level test.

CLINICAL TRIALS

Compared with responses to screening items, responses relating to clinical trials were much more varied. Because of this, the three positive and three negative reponse catagories have been collapsed for presentation in the summary tables below.

TABLE 12 Percentages of Informants Indicating Positive, Uncertain and Negative Responses to Intention, Attitude, Subjective and Personal Norms, re Participation in Clinical Trials

VARIABLE		COLLAPSED RESPONSES		
		Positive	Uncertain	Negative
Participatory Intention - new pills =(A)		43,3	21,2	34,1
other pills=(B)		48,0	18,7	30,9
Attitude to Personal Participation	(A)	37,2	33,7	27,7
	(B)	41,3	31,7	24,8
Subjective Norm	(A)	23,2	29,9	45,4
	(B)	25,9	29,5	42,0
Personal Norm	(A)	41,4	20,0	37,5
	(B)	44,8	18,7	34,1

74.3% of respondents indicated that they thought it unlikely their doctor would ask them to test new pills and 72.6% felt the same about other pills.

TABLE 13 Percentages of Informants Indicating Positive,Uncertain and Negative Beliefs that Items Would Be Associated With Clinical Trial Participation

OUTCOME BELIEF	COLLAPSED RESPONSES		
	Positive	Uncertain	Negative
Contribute to knowledge that might benefit others	87,8	7,8	3,0
Serve as a 'Guinea Pig'	87,1	6,5	4,6
Could ask for any information wanted	85,4	6,0	7,1
Possible long-term side effects	82,3	10,1	6,1
Contribute to knowledge that might benefit self	82,2	11,5	4,6
If 'off colour' might worry re effects of pills	80,3	6,2	11,4
Dr, would give all info, wanted re the study	77,4	9,8	11,4
Dr, would give all info, wanted re pills being tested	75,1	10,6	12,6
Risk health eg, by possible side effects	73,4	16,0	9,0
If testing pills for prevention might not work if ever really needed	48,7	27,2	22,6
Might be taken off good pills already taking	38,8	26,0	32,1

TABLE 14 Percentages of Informants Indicating Positive,Uncertain and Negative Outcome Evaluation of Items Associated With Clinical Trial Participation

OUTCOME BELIEF	COLLAPSED RESPONSES		
	Positive	Uncertain	Negative
Contribute to knowledge that might benefit others	83,1	12,7	1,2
Serve as a 'Guinea Pig'	22,2	26,2	49,6
Could ask for any information wanted	96,0	1,4	0,2
Possible long-term side effects	9,3	17,1	70,4
Contribute to knowledge that might benefit self	81,0	14,0	1,9
If 'off colour' might worry re effects of pills	20,6	18,1	59,1
Dr, would give all info, wanted re the study	95,8	2,3	0,2
Dr, would give all info wanted re pills being tested	94,4	3,0	0,2
Risk health eg, by possible side effects	12,8	14,1	70,5
If testing pills for prevention might not work if ever really needed	10,7	29,2	57,7
Might be taken off good pills already taking	10,5	29,2	56,6

Just 16 informants stated that they had previously taken part in clinical trials, and 14 of these stated that they would be willing to do so again.

3. PREDICTIVE ASSOCIATIONS BETWEEN BEHAVIOURAL INTENTION MODEL VARIABLES

Following initial examination and processing of the raw data, the predictive associations between variables were tested as prescribed by the Behavioural Intention Model (BIM). Firstly, Multiple Regression Analysis (MRA) was performed to assess the relationship between the variables of attitude & subjective norm with that of behavioural intention. The relative importance of each independent variable was also evaluated.

Response options had allowed for the computation of differential measures of intention re clinical trial participation, but the predicitive values obtained from these measures were less than those obtained from straightforward measures of intention. Thus the latter were used in all subsequent analyses involving measures of intention.

The relationship between principal BIM variables was quite high for both Screening intention and intention to participate in Clinical Trials - (R=.687; R=.732 respectively). In both cases attitude to participation was considerably more important to the equation than subjective norm.

Further MRAs were performed to assess the relationships between: - (a) behavioural beliefs and attitude; and (b) normative beliefs and subjective norm. In both instances crossproduct values of beliefs were employed. Crossproduct values of behavioural beliefs were computed for each outcome by multiplying the belief strength measure by its corresponding outcome evaluation measure. Crossproduct values for normative beliefs were obtained by a similar process of multiplying values pertaining to respondents' assessments of the feelings of their referents, by respondents' motivation to comply with that referent.

In fact, the BIM states that the strength of association between beliefs and their successors in the model should not be assessed by regression techniques, but by correlations of primary components (attitudes and subjective norms) with the sum of belief crossproducts, thus using equal weights. However, the coefficient values obtained by the prescribed technique were slightly lower than those obtained from multiple regression analysis.

Explanation of this finding may be found in Cattin's (1978) paper where he states that "regression will outweigh equal weights if sample size is large enough, or the N to P ratio is large enough" - where N = number of respondents and P = number of predictors.

In the reported study, both the sample size and the N to P ratio were of considerable magnitude.

Therefore, although both BIM prescribed unit weight coefficients and regression coefficients are shown in figures 1 and 3 (for screening and clinical trials respectively), details of the regression analyses are also presented in tables 17 & 19 (screening); and 22 26 & 27 (clinical trials).

These relationships were not so high as those found in the previous tests, although they were still reasonably high with the lowest accounting for 18% of the variance. However, because not all referents were applicable to all respondents; and because some respondents marked 'not applicable' in respect of motivation to comply even where they had indicated a referent's opinion; the number of cases processed in the subjective norm/normative beliefs equation was less than half that applying to behavioural beliefs. Therefore, interpretation of the relative relationships must be made with extreme caution.

When personal normative belief values were added to those of attitude and subjective norm as predictor variables, the predictive value of the equation was increased quite substantially. Because of the importance of personal norm to the prediction of intention, regression analyses were performed using cross-product measures of behavioural beliefs, to predict personal norm. The values for these were similar to those obtained for MRAs in which attitude was the dependent variable.

The predictive associations of the model, for both screening and clinical trial intention, are shown in figures 1 and 3 respectively. Corresponding predictive associations and relative weights of attitude, subjective norm and personal norm are shown in figures 2 and 4. MRA summaries are given in tables 15 to 27.

SCREENING

Figure 1 Predictive Associations Using the Basic BIM

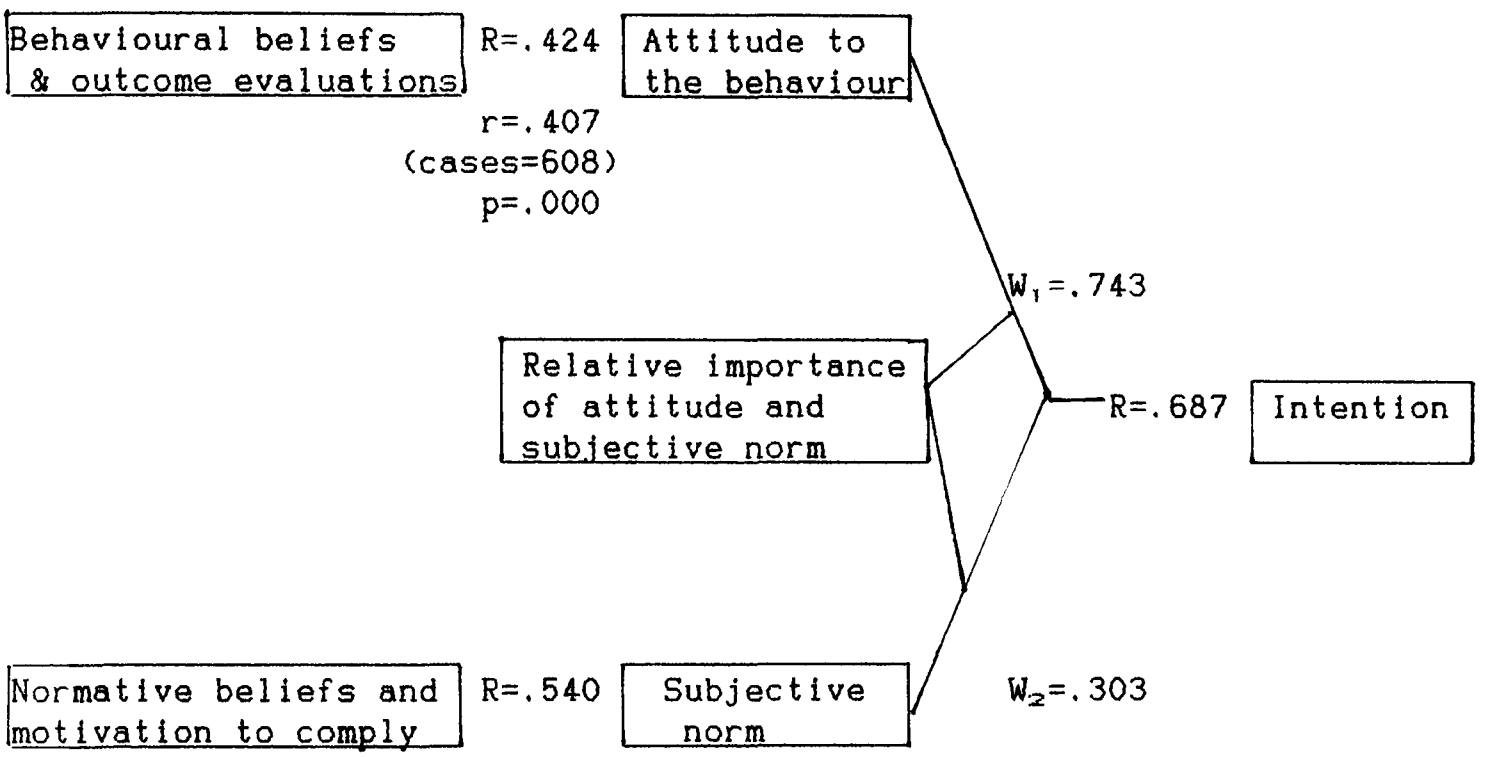
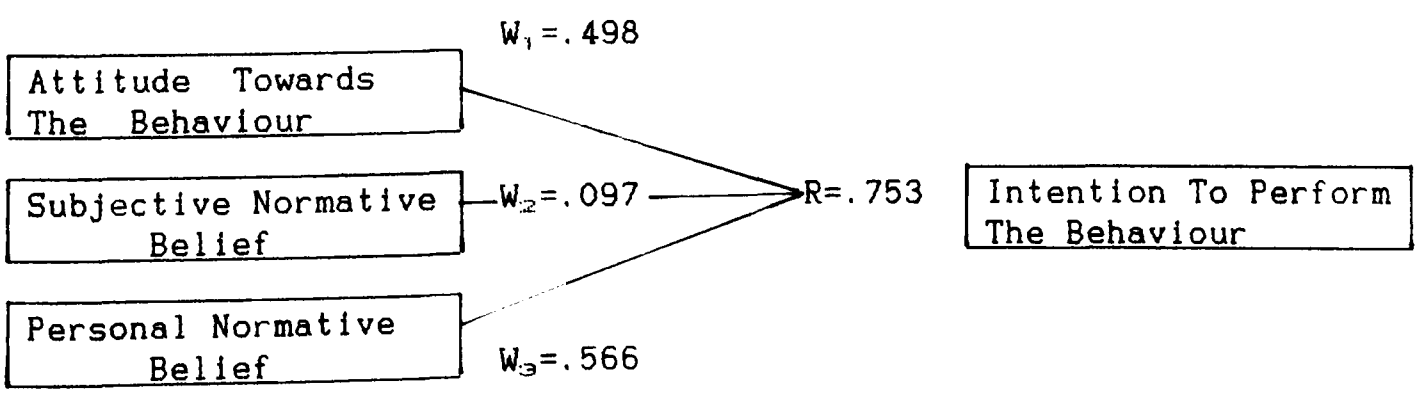


Figure 2 Predictive Association of Intention From Attitude, Subjective Norm and Personal Norm



MULTIPLE REGRESSION ANALYSES

SCREENING

TABLE 15 Summary of MRA with Intention to Participate as the DV and Personal Attitude and Subjective Norm as the IVs,

FINAL VALUES	VARIABLES IN THE EQUATION							
	Variable Entered	R^2	B	Beta	Part	Partial	T	p
Cases processed=691	(In Order of Inclusion)	Change			Corr	Corr		
Multiple R ,687	Personal Attitude (Gdhave)	,419	,74	,54	,49	,56	17,7	,000
R Square ,471								
Adjusted R ,470	Subjective Norm	,052	,30	,25	,23	,30	8,3	,000
F Value 307,002								
Significance ,000								

TABLE 16 Summary of MRA with Intention as the DV and Attitudes, Subjective Norm and Personal Norm as the IVs

FINAL VALUES	VARIABLES IN THE EQUATION							
	Variable Entered	R^2	B	Beta	Part	Partial	T	p
Cases processed=691	(In Order of Inclusion)	Change			Corr	Corr		
Multiple R ,753	Personal Norm (Persn)	,472	,56	,43	,31	,42	12,3	,000
R Square ,567								
Adjusted R ,565	Personal Attitude	,090	,50	,36	,29	,40	11,6	,000
F Value 299,644								
Significance ,000	Subjective Norm	,004	,10	,08	,06	,10	2,6	,009

NB, Perceived likelihood of screening invitation being issued did not contribute to the functions. This variable did not reach the .05 limit in any analysis in which it was included.

TABLE 17 Summary of MRA with Attitude to Participation as the DV and Behavioural Beliefs (strength/evaluation cross-products) as the IVs

FINAL VALUES	VARIABLES IN THE EQUATION							
	Variable Entered	R^2	B	Beta	Part	Partial	T	p
Cases processed=629	(In Order of Inclusion)	Change			Corr	Corr		
Multiple R ,424	Help keep fit for longer	,130	,07	,22	,18	,20	4,94	,000
R Square ,179								
Adjusted R ,175	Definitely find out if at							
F Value 43,189	risk	,040	,46	,20	,18	,19	4,92	,000
Significance ,0000								
	Get peace of mind from an							
	"all clear"	,010	,37	,11	,10	,11	2,64	,008

TABLE 18 Summary of MRA with Personal Norm as the DV and Behavioural Beliefs (strength/evaluation cross-products) as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part	Partial	T	p
Cases processed=597		(In Order of Inclusion)	Change			Corr	Corr		
Multiple R	,448	Help keep fit for longer	,144	,06	,20	,16	,18	4,44	,000
R Square	,201								
Adjusted R	,196	Definitely find out if at							
F Value	37,258	risk	,033	,04	,16	,14	,16	3,95	,000
Significance	,0000								
		Get peace of mind from an							
		"all clear"	,015	,04	,13	,11	,13	3,12	,002
		Spur to healthier living	,007	,02	,09	,08	,09	2,29	,022

TABLE 19 Summary of MRA with Subjective Norm as the DV and Normative Beliefs Products (perceived opinion of referent by motivation to comply with referent) as IVs

FINAL VALUES		REFERENTS IN THE EQUATION							
		Referent Entered	R^2	B	Beta	Part	Partial	T	p
Cases processed=226		(In Order of Inclusion)	Change			Corr	Corr		
Multiple R	,540	Friends	,197	,07	,33	,31	,35	5,50	,000
R Square	,291								
Adjusted R	,284	Spouse/Partner	,093	,15	,32	,30	,34	5,42	,000
F Value	45,806								
Significance	,0000								

CLINICAL TRIALS

The following figures pertain only to 'new pills'. Results relating to 'Other Pills' were very similar and are shown in appendix 17.

Figure 3 Predictive Associations Using The Basic BIM

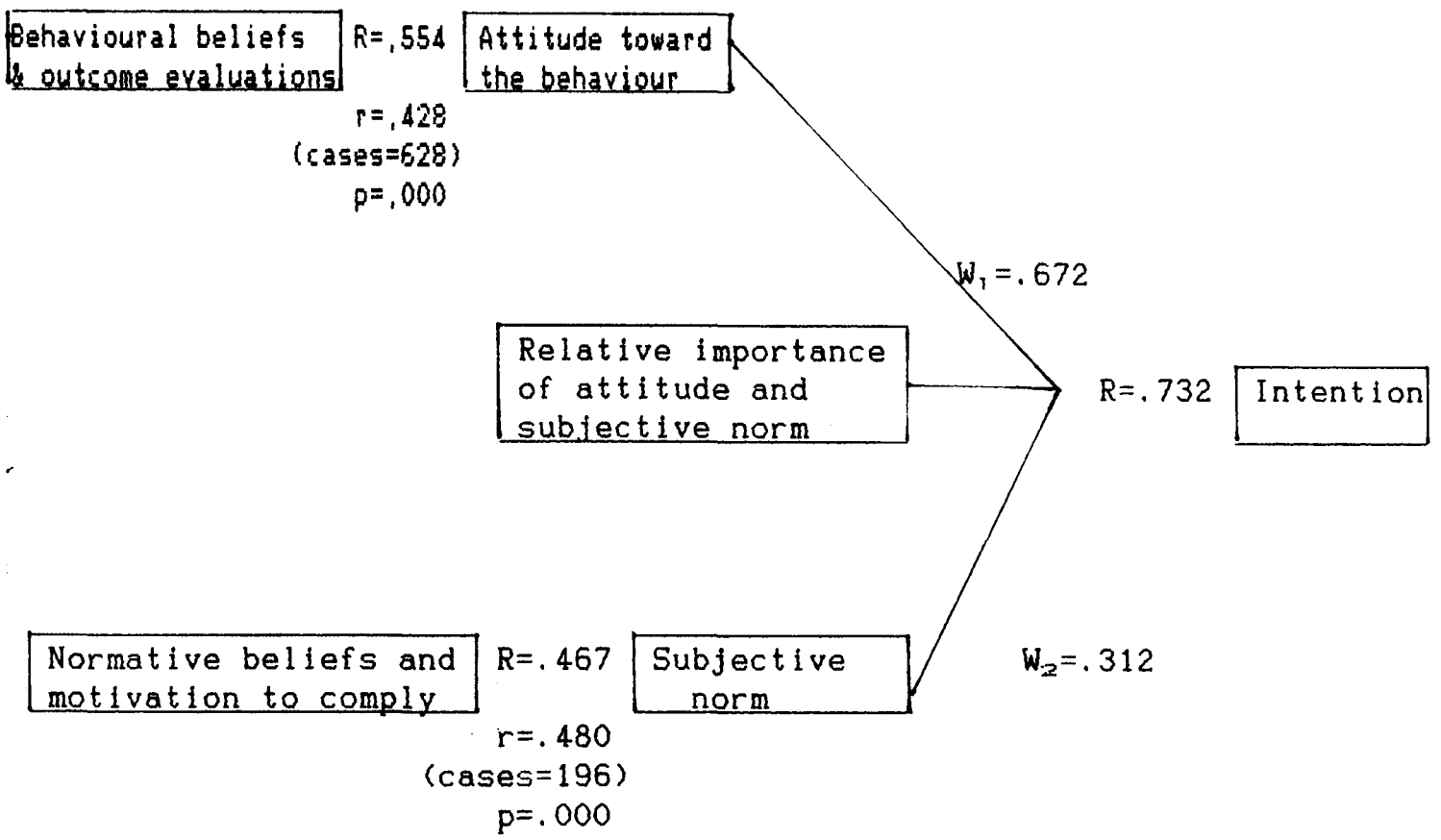


Figure 4 Prediction of Intention from Attitudes, Subjective Norm and Personal Norm

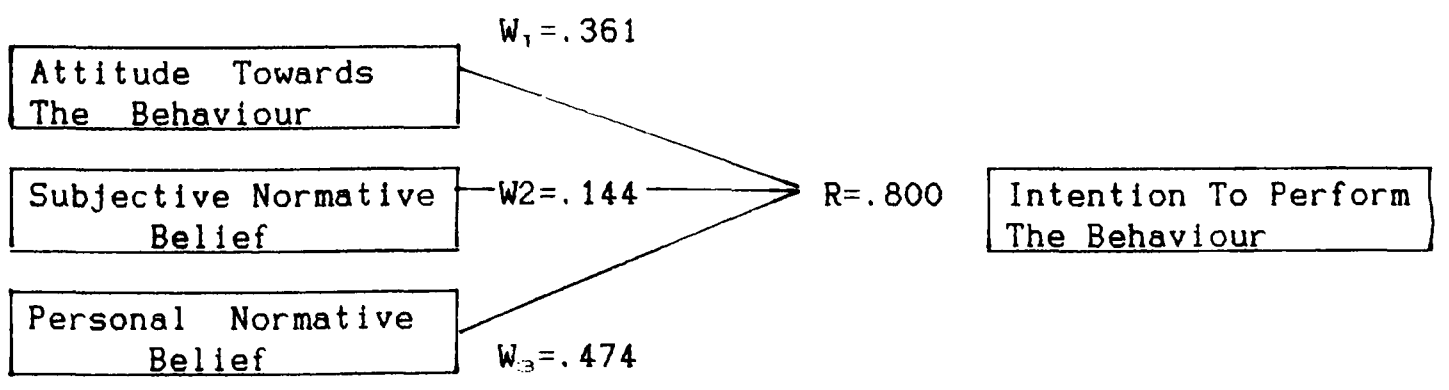


TABLE 20 Summary of MRA with Intention to Participate in Clinical Trials of 'New Pills' as the DV and Attitude and Subjective Norm as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=677		(In Order of Inclusion)	Change						
Multiple R	,731	Attitude	,478	,63	,53	,45	,55	17,10	,000
R Square	,536								
Adjusted R	,534	Subjective norm	,057	,31	,28	,24	,33	9,13	,000
F Value	388,746								
Significance	,0000								

TABLE 21 Summary of MRA with Intention to Participate in Clinical Trials of 'New Pills' as the DV and Attitude, Subjective Norm and Personal Norm as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=675		(In Order of Inclusion)	Change						
Multiple R	,800	Personal Norm	,563	,47	,47	,33	,48	14,18	,000
R Square	,640								
Adjusted R	,639	Attitude	,067	,36	,31	,22	,35	9,66	,000
F Value	398,515								
Significance	,0000	Subjective Norm	,011	,14	,13	,10	,17	4,48	,000

As with screening analyses, respondents' expectations re the likelihood of being asked to participate in clinical trials did not prove to be a significant variable in any of the tests in which it was included.

Corresponding anaylses pertaining to clinical trials of 'Other Pills', yielded remarkably similar results to the previous two tables. Summaries of these analyses are given in appendix 17.

In the last three regression analyses - prediction of attitude from behavioural beliefs; prediction of personal norm from behavioural beliefs; and prediction of subjective norm from normative beliefs - there were some differences in the items entered in the equations produced for 'new' and 'other' pills. Therefore, summaries of all these equations are presented below.

TABLE 22 Summary of MRA with Attitude to Participation in Clinical Trials of 'New Pills' as the DV; and Behavioural Beliefs (strength/evaluation crossproducts) as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=628		(In Order of Inclusion)	Change						
Multiple R	,554	Serving as a 'guinea pig'	,173	,10	,30	,25	,29	7,47	,000
R Square	,307								
Adjusted R	,300	Contributing to knowldege							
F Value	45,941	to benefit self	,105	,09	,18	,11	,13	3,21	,001
Significance	,0000								
		Contributing to knowledge							
		to benefit others	,009	,08	,16	,11	,12	2,92	,004
		Getting info, re the pills	,007	,03	,09	,08	,10	2,47	,014
		Risking health-side effects	,005	,04	,11	,09	,11	2,66	,008
		Risk acquired resistance	,007	-,04	-,09	-,08	-,10	-2,49	,013

TABLE 23 Summary of MRA with Attitude to Participation in Clinical Trials of 'Other Pills' as the DV and Behavioural Beliefs (strength/evaluation cross-products) as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=624		(In Order of Inclusion)	Change						
Multiple R	,541	Serving as a 'guinea pig'	,163	,10	,28	,23	,27	6,90	,000
R Square	,293								
Adjusted R	,286	Contributing to knowldege							
F Value	42,703	to benefit others	,099	,10	,20	,12	,14	3,51	,000
Significance	,0000								
		Getting adequate info, re							
		pills being tested	,011	,03	,09	,09	,11	2,69	,007
		Endangering health by							
		possible side effects	,007	,05	,12	,10	,12	3,08	,002
		Contributing to knowledge							
		that might benefit self	,007	,06	,03	,08	,09	2,34	,020
		Risking acquired resistance	,006	-,04	-,08	-,08	-,09	-2,26	,024

TABLE 24 Summary of MRA with Personal Norm ('New Pills') as the DV; and Behavioural Beliefs (strength/evaluation cross-products) as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=631		(In Order of Inclusion)	Change						
Multiple R	,528	Contributing to knowldege to benefit self	,163	,12	,20	,12	,14	3,53	,000
R Square	,279								
Adjusted R	,273								
F Value	48,342	Serving as a 'guinea pig'	,089	,10	,24	,21	,24	6,08	,000
Significance	,0000								
		Getting info, re the pills	,015	,05	,12	,11	,13	3,34	,001
		Contributing to knowledge to benefit others	,006	,07	,13	,08	,09	2,30	,022
		Risking health-side effects	,005	,04	,08	,07	,08	2,06	,000

TABLE 25 Summary of MRA with Personal norm ('Other Pills') as the DV; and Behavioural Beliefs (strength/evaluation cross-products) as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=627		(In Order of Inclusion)	Change						
Multiple R	,518	Contributing to knowldege to benefit others	,161	,11	,18	,11	,13	3,18	,001
R Square	,268								
Adjusted R	,263								
F Value	57,011	Serving as a 'guinea pig'	,086	,12	,29	,28	,31	8,12	,000
Significance	,0000								
		Getting adequate info, re pills being tested	,012	,04	,10	,10	,11	2,86	,004
		Contributing to knowledge that might benefit self	,009	,09	,15	,09	,11	2,70	,007

TABLE 26 Summary of MRA with Subjective Norm ('New Pills') as the DV; and Normative Beliefs('New Pills')/Motivation To Comply Crossproduct Measures, as the IVs

FINAL VALUES		REFERENTS IN THE EQUATION							
		Referent Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=196		(In Order of Inclusion)	Change						
Multiple R	,467								
R Square	,218	Parents	,199	,08	,26	,15	,17	2,39	,018
Adjusted R	,210								
F Value	26,960	Friends	,020	,08	,24	,14	,16	2,20	,029
Significance	,000								

TABLE 27 Summary of MRA with Subjective Norm ('Other Pills') as the DV; and Normative Beliefs('Other Pills')/Motivation To Comply Crossproduct Measures, as the IVs

FINAL VALUES	REFERENTS IN THE EQUATION							
	Referent Entered	R^2	B	Beta	Part Corr	Partial Corr	T	p
Cases processed=198	(In Order of Inclusion)	Change						
Multiple R ,470								
R Square ,221	Parents	,221	,17	,47	,47	,47	7,46	,000
Adjusted R ,217								
F Value 55,719								
Significance ,0000								

4. T-TESTS TO DIFFERENTIATE BELIEFS BETWEEN INTENDING PARTICIPANTS AND NON-PARTICIPANTS

A series of t-tests were performed in order to gain some understanding of the underlying reasons behind different behavioural intentions. The tests were intended to demonstrate differences in the associated beliefs of intending participant and non-participant groups.

Because of the missing data problems associated with normative beliefs, and because subjective norm played such a minor role in the prediction of intention, no further analyses of normative beliefs were worth presenting. Therefore only results pertaining to behavioural beliefs are summarised below.

Regarding clinical trial participation, the devising of participant and non-participant groups was relatively straightforward. Participants included all respondents who had indicated some degree of positive intention -ie had stated that it was 'Very' 'Quite' or 'Slightly' Likely that they would agree to take part in the testing of pills. Non-participants were defined as respondents who stated that it was 'Very' 'Quite' or 'Slightly' *Unlikely* that they would agree to take part. 'Don't Knows' were excluded from analysis.

The proportions of 'participants', 'non participants' and 'don't know's were 43.3%, 34.1%, & 21.2% respectively for 'new pills'; and 48%, 30.9% & 18.7% for 'other pills'.

However, it was not possible to repeat this procedure for devising comparison groups in respect of intended participation in screening.

In all, 90.5% of respondents indicated some degree of positive intention to participate in screening. Of these, 54.2% had stated that they would **'definitely'** have the check if it were offered (group 1); 22.3% that they **would** have the check (group 2); and 14% that they would **'possibly'** have the check (group 3). It was considered possible that there might be a difference between those who had expressed the stongest degree of intention and those who had expressed weaker intentions.

Therefore this was explored by a series of t-tests comparing all relevant variables between groups 1 & 2; groups 1 & 3; and groups 2 & 3. It was found that there were indeed, significant differences on almost all measures, between groups 1 & 2 and between groups 1 & 3; but almost no significant differences between groups 2 & 3. Thus it was decided to nominate group 1 as the 'participant' group, and combine the respondents of groups 2 & 3 into 'non-participants'. Details of these t-tests are given in appendix 18.

In all subsequent comparisons of 'participant' and 'non-participant' groups relating to screening, these groupings were used.

In this section, summaries of t-tests exploring differences in belief strength, outcome evaluations and crossproduct measures are given for screening intention in tables 25 to 27 respectively; and for clinical trials in tables 28 to 30.

Results relating to 'new' and 'other' pills were very similar, so those pertaining to 'new' pills only, are given in the main text, whilst those relating to 'other' pills are given in appendix 19.

SCREENING BELIEFS

Group 1 = 'Participants'; Group 2 = 'Non-Participants' as defined above,

TABLE 28 Summary of T-Tests For All Behavioural Belief Variables (Belief Strength Measures) Between Groups 1 & 2 as Detailed Above

VARIABLE	BELIEF STRENGTH								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Find out if at risk	364	2,16	(1,15)	244	1,66	(1,30)	4,82	,000	,03
Want to be told 'straight'	367	2,79	(0,73)	244	2,62	(0,82)	2,59	,01	<,01
Get peace of mind from "all clear"	358	2,75	(0,71)	240	2,50	(0,96)	3,46	,001	,02
Could take precautions	366	2,71	(0,69)	245	2,36	(1,12)	4,39	,000	,03
Be told best precautions	363	2,65	(0,74)	244	2,33	(1,02)	4,17	,000	,03
Stay fit for longer	366	2,64	(0,72)	245	2,11	(1,06)	6,76	,000	,07
Less chance of later infirmity	361	2,23	(1,09)	245	1,73	(1,27)	5,07	,000	,04
Get lecture from doctor doctor	352	0,80	(2,08)	242	0,39	(1,98)	2,41	,016	<,01
Spur to healthy living	361	1,97	(1,39)	244	1,52	(1,55)	3,76	,000	,02
Stop smoking	94	2,58	(1,04)	78	2,61	(0,81)	0,21	NS	-
Cut drinking	107	1,10	(2,05)	76	0,99	(1,92)	0,39	NS	-
Change diet	247	1,59	(1,53)	193	1,28	(1,69)	1,96	NS	-
Exercise	252	1,81	(1,31)	176	1,41	(1,53)	2,74	,006	,01

TABLE 29 Summary of T-Tests For All Behavioural Belief Variables (Outcome Evaluation Measures) Between Groups 1 & 2 as Detailed Above

VARIABLE	OUTCOME EVALUATION								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Find out if at risk	364	2,54	(1,10)	244	2,01	(1,37)	5,02	,000	,04
Want to be told 'straight'	367	2,67	(0,91)	244	2,29	(1,18)	4,20	,000	,03
Get peace of mind by "all clear"	358	2,80	(0,55)	240	2,58	(0,78)	3,72	,000	,02
Could take precautions	366	2,76	(0,61)	245	2,43	(0,78)	5,45	,000	,04
Be told best precautions	363	2,83	(0,44)	244	2,48	(0,76)	6,42	,000	,06
Stay fit for longer	366	2,76	(0,62)	245	2,44	(0,78)	5,36	,000	,04
Less chance of later infirmity	361	2,60	(0,84)	245	2,20	(1,04)	5,00	,000	,04
Get lecture from doctor	352	1,38	(1,65)	242	0,81	(1,68)	4,08	,000	,02
Spur to healthier living	361	2,01	(1,31)	244	1,61	(1,37)	3,84	,000	,02
Stop smoking	94	1,63	(1,71)	78	0,97	(1,85)	2,39	,02	,03
Cut drinking	107	1,08	(1,51)	76	0,57	(1,50)	2,29	,02	,04
Change diet	247	1,73	(1,34)	193	1,23	(1,54)	3,54	,000	,02
Exercise	252	1,78	(1,25)	176	1,46	(1,26)	2,57	,01	,01

TABLE 30 Summary of T-Tests For All Behavioural Belief Variables (Strength/Evaluation Crossproduct Measures) Between Groups 1 & 2 as Detailed Above

VARIABLE	OUTCOME STRENGTH/EVALUATION CROSSPRODUCTS								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Find out if at risk	364	5,77	(3,87)	244	3,70	93,91)	6,44	,000	,06
Want to be told 'straight'	367	7,54	(3,27)	244	6,40	(3,46)	4,11	,000	,02
Get peace of mind by "all clear"	358	7,92	(2,31)	240	6,83	(3,20)	4,51	,000	,03
Could take precautions	366	7,69	(2,33)	245	6,16	(3,27)	6,30	,000	,06
Be told best precautions	363	7,56	(2,52)	244	6,04	(3,08)	6,38	,000	,06
Stay fit for longer	366	7,46	(2,46)	245	5,55	(3,23)	7,85	,000	,09
Less chance of later infirmity	361	6,29	(3,34)	245	4,56	(3,61)	6,05	,000	,06
Get lecture from doctor	352	1,49	(3,03)	242	0,47	(2,49)	3,54	,000	,02
Spur to healthier living	361	4,39	(2,99)	244	2,64	(2,70)	4,97	,000	,04
Stop smoking	94	4,47	(4,96)	78	2,82	(5,12)	2,10	,036	,02
Cut drinking	107	1,51	(3,68)	76	0,72	(3,00)	1,70	NS	-
Change diet	247	3,07	(3,82)	193	1,93	(3,73)	2,40	,02	,01
Exercise	252	3,69	(3,47)	176	2,14	(3,37)	3,64	,000	,03
		68,85			49,96		7,78	,000	,10

CLINICAL TRIALS ('NEW PILLS')

Group 1=respondents who answered Very, Quite or Slightly Likely to Q8,p7
Group 2=repondents who answered Very Quite or Slightly Unlikely,to Q8,p7
'Don't Know's were excluded from analysis.

TABLE 31 Summary Of T-Tests On All Behavioural Belief Variables (Belief Strength Measures) Between Groups 1 & 2 as Detailed Above

VARIABLE	BELIEF STRENGTH								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	296	1,94	(1,45)	228	1,18	(2,00)	4,48	,000	,03
Get info, re the pills	294	1,84	(1,49)	228	1,13	(1,96)	4,53	,000	,04
Could ask for any info,	295	2,32	(1,19)	220	1,73	(1,72)	4,36	,000	,03
Worry if felt 'off colour'	291	1,48	(1,70)	226	1,83	(1,73)	-2,28	,02	<,01
Worry re side effects	291	0,91	(1,55)	225	2,06	(1,23)	-9,38	,000	,14
Contributing to knowledge which might benefit self	291	2,11	(1,02)	227	1,28	(1,60)	6,79	,000	,08
Contributing to knowledge which might benefit others	294	2,29	(0,89)	227	1,63	(1,55)	5,70	,000	,06
Serving as a 'guinea pig'	294	1,89	(1,42)	227	2,47	(1,09)	-5,26	,000	,05
Worry re long-term effects	294	1,36	(1,44)	224	2,19	(1,12)	-7,32	,000	,09
Worry -acquired resistance	294	0,31	(1,71)	224	0,66	(1,72)	-2,33	,02	<,01
Worry re 'being taken off good pills'	294	0,12	(2,10)	222	0,15	(2,01)	-0,20	NS	-

TABLE 32 Summary Of T-Tests On All Behavioural Belief Variables (Outcome Evaluation Measures) Between Groups 1 & 2 as Detailed Above

VARIABLE	OUTCOME EVALUATIONS								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	296	2,75	(0,61)	228	2,63	(0,77)	1,89	NS	-
Getting info, re the pills	294	2,76	(0,58)	228	2,66	(0,83)	1,79	NS	-
Could ask for any info,	295	2,80	(0,61)	220	2,78	(0,57)	0,25	NS	-
Worry if felt 'off colour'	291	-0,48	(1,86)	226	-1,17	(1,82)	4,23	,000	,03
Worry re side effects	291	-0,99	(1,72)	225	-1,86	(1,630	5,80	,000	,06
Contrib,to knowledge(self)	291	2,19	(0,94)	227	1,29	(1,31)	8,64	,000	,12
" " " (others)	294	2,29	(0,96)	227	1,48	(1,23)	8,18	,000	,11
Serving as a 'Guinea Pig'	294	0,15	(1,71)	227	-1,63	(1,54)	12,27	,000	,22
Worry re long-term effects	294	-1,10	(1,69)	224	-1,97	(1,55)	5,99	,000	,06
Worry-acquired resistance	294	0,74	(1,56)	224	-1,42	(1,49)	5,02	,000	,04
Worry re 'being taken off good pills'	294	-0,85	(1,62)	222	-1,41	(1,55)	3,97	,000	,03

TABLE 33 Summary Of T-Tests On All Behavioural Belief Variables (Strength/Evaluation Crossproduct Measures) Between Groups 1 & 2 as Detailed Above

VARIABLE	OUTCOME STRENGTH/EVALUATION CROSSPRODUCTS								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	296	5,43	(4,40)	228	3,30	(5,56)	4,70	,000	,04
Getting info,re the pills	294	5,19	(4,38)	228	3,05	(5,62)	4,75	,000	,04
Could ask for any info,	295	6,55	(3,72)	227	4,79	(5,10)	4,40	,000	,03
Worry if felt 'off colour'	291	-0,76	(4,75)	226	-2,28	(5,45)	3,32	,001	,02
Worry re side effects	291	-1,07	(3,84)	225	-3,94	(4,91)	7,23	,000	,09
Contrib, to knowledge(self)	291	5,04	(3,28)	227	2,50	(3,59)	8,40	,000	,12
" " " (others)	294	5,62	(3,28)	227	3,28	(3,69)	7,63	,000	,10
Serving as a'Guinea Pig'	294	0,67	(4,50)	227	-3,97	(4,93)	11,18	,000	,19
Worry re long-term effects	294	-1,89	(3,87)	224	-4,51	(4,64)	6,83	,000	,08
Worry-acquired resistance	294	0,01	(3,27)	224	-0,92	(4,24)	2,74	,006	,01
Worry re 'being taken off good pills'	294	0,39	(4,19)	222	0,23	(4,80)	0,39	NS	-
	25,18			1,53				,0000	

5. DISCRIMINANT FUNCTION ANALYSIS

The results of multiple regression analyses and t-tests suggested that participant and 'non-participant' groups could be quite accurately predicted and distinguished on the basis of attitude, norms, and behavioural beliefs. Therefore, it was decided to test this by means of discriminant function analysis (DFA).

In respect of screening, the discriminant groups were those created for t-test comparisons -ie. strongest positive intenders vs weaker positive intenders. Three analyses were performed, the 'Priors = size' command being entered for each.

The first DFA included the variables of attitude, subjective norm, personal norm and the crossproduct values of behavioural beliefs. Almost 50% of the variance was accounted for by this function, in which prediction of group membership for both groups was high.

However, behavioural belief variables contributed little to the overall function so a second analysis, including only attitudinal and normative variables was performed. Again 50% of the variance was accounted for by this function, but whilst accurate prediction of group 1 was slightly increased, prediction of group 2 was less effective.

The third DFA included only behavioural beliefs variables. The results of this function were disappointing in terms of both variance accounted for and group membership prediction. Wilks lambda was .840 and whilst 83% of group 1 were accurately predicted, the success rate for group 2 was 49%. Summaries of the first two functions only are therefore given in this section (tables 34 & 35).

Regarding clinical trials, discriminant functions were first performed on 3 groups - positive intenders, negative intenders, and 'don't know's. These functions were totally unsuccessful, so as with t-tests, the 'Don't Know's were excluded and the positive and negative comparison groups employed.

The same 3 DFAs were performed as for screening and again the 'Priors=size' command was used. Once more the functions employing attitudinal and normative variables proved to be the most successful. However, the function including only behavioural belief variables was considerably better for clinical trials than screening and is thus included in the following summary tables.

SCREENING

TABLE 34 Summary of DFA with 'Strong Intention' V 'Less Strong Intention' as the Discriminant Groups; and Attitude, Subjective Norm, Personal Norms, and Behavioural Beliefs (crossproducts) as the IVs

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations	Pooled Within Group Correlations
	Group 1	Group 2			
Group 1(n=316)	91,8%	8,2%	,509	Personal Norm ,698	,868
Group 2(n=225)	21,8%	78,2%		Personal Att, ,376	,600
Percent of "grouped" cases correctly classified = 86,14%					

TABLE 35 Summary of DFA with Discriminant Groups as above; and Attitudes, Subjective & Personal Norms as the IVs

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=375)	93,1%	6,9%	,495	Personal Norm	,616	,836
Group 2(n=250)	28,4%	71,6%		General Attitude	,376	,639
Percent of "grouped" cases correctly				Personal Att,	,266	,583
classified = 84,48%				Subjective Norm	,186	,476

NB. Where discriminant variables were few in number (tables 35 & 37), all entered variables are presented in the summary tables. For functions in which several discriminant variables were entered, only those achieving standardised canonical correlations of .300 and above have been reported in the summary tables (tables 34, 36 & 38). Full details of results showing values for all entered variables are given in appendix 20.

CLINICAL TRIALS

TABLE 36 Summary of DFA with 'Positive Intention' V 'Negative Intention' as the Discriminant Groups; and Attitude, Subjective Norm, Personal Norms, and Behavioural Beliefs (crossproducts) as the IVs

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=271)	91,6%	8,4%	,404	Personal Norm	,625	,866
Group 2(n=214)	16,8%	83,2%		Attitude	,342	,730
Percent of "grouped" cases correctly classified = 76,27%						

TABLE 37 Summary of DFA with discriminant Groups as Above and Attitude, Subjective & Personal Norms as the IVs

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=298)	90,9%	9,1%	,411	Personal Norm	,657	,896
Group 2 (n=231)	16,5%	83,5%		Attitude	,402	,733
Percent of "grouped" cases correctly classified = 87,71%				Subjective Norm	,216	,583

TABLE 38 Summary of DFA with Discriminant Groups as Above and Behavioural Beliefs (Crossproduct Measures) as the IVs

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=276)	82,2%	17,8%	,716	XFGPIG	,624	,774
Group 2(n=217)	31,3%	68,7%		XFEFFS	,387	,528
Percent of "grouped" cases correctly classified = 76,27%				XFCONTME	,376	,584

The outcome beliefs represented by crossproduct variable names were as follows:

To take part in clinical trials would mean:-
XFGPIG = Serving as a Guinea Pig
XFCONTME = Contributing to knowledge that might benefit self
XFSEFFS = Risking health by possible side effects

6. COMPARISONS OF SAMPLE SUB-SUBGROUPS

Study aims included the identification of any socio-demographic variables associated with behavioural intention or deterrent factors; and a comparison of responses from medical and non-medical sampling sources.

Sociodemographic profiles of respondents expressing the strongest intention to participate in screening and those expressing weaker intentions are given in tables 38A. Corresponding profiles of intending participants and non-participants in clinical trials are shown in table 39A.

A series of sub-group investigations were performed using chi square and t-tests. However, because multiple t-tests will tend to produce some significant differences purely by chance, the acceptable alpha level was lowered to .01 or less for these analyses. Therefore, only differences reaching this level will be reported.

6.1 SOCIO-DEMOGRAPHIC DIFFERENCES

Major socio-demographic characteristics investigated were: age, sex, and manual vs. non-manual occupations. The latter groupings were explored because manual workers suffer a higher incidence of cardiovascular events than non-manual workers, so it was considered important to assess whether they were less likely to attend screening, and if so, what factors served as the major deterrents to their participation.

In fact, there were no significant differences between these occupational groups in terms of their intentions, attitudes or norms, regarding screening participation. Neither were there any differences, in these respects, between the sexes. However, there was an age difference in reported screening intentions, as summarised in table 39 below.

Regarding clinical trial participation, although age did not seem to be associated with intention, attitudes, norms, or behavioural beliefs, there was evidence of some sex differences.

Women expressed significantly more negative attitudes and subjective norms than men, and there were significant differences in the strength with which males and females held certain behavioural beliefs. Also, whilst both sexes reported that it was unlikely they would agree to trial entry then change their minds and default, women regarded this possibility as significantly less unlikely than did men. All these differences are summarised in table 40.

SCREENING

TABLE 38A Sociodemographic Profile of Strongest (group 1) And Weaker (group 2) Intenders to Participate In Screening

PARTICIPANT GROUP	SEX		AGE GROUP			OCCUPATION	
	Male	Female	18-44	45-Retirement	Retirement+	Non-Manual	Manual
1	49%	51%	47%	32%	21%	60%	33%
2	44%	56%	68%	20%	12%	59%	30%

TABLE 39 Summary of Crosstabulations Screening Intention (1=Strongest; 2= Weaker Positive) By Age

		AGE GROUPS			ROW TOT
SCREENING INTENTION		18-44	45-Pens.	Pens+.	
1	Observed	176	120	79	375
	Expected	206,9	102,3	65,8	(59,8%)
2	Observed	170	51	31	252
	Expected	139,1	68,7	44,2	(40,2%)
	COL. TOT	346	171	110	627

NB.
Pens. = pensionable age - females 60, males 65
Pens+ = females over 60, males over 65

χ^2 = 25,75 df=2 p=,000 λ=,000

CLINICAL TRIALS

TABLE 39A Sociodemographic Profile of Intending Paricipants (group 1) And Non-Participants (group 2)

PARTICIPANT GROUP	SEX		AGE GROUP			OCCUPATION	
	Male	Female	18-44	45-Retirement	Retirement+	Non-Manual	Manual
1	53%	47%	51%	30%	18%	55%	36%
2	46%	54%	61%	22%	17%	64%	27%

TABLE 40 Summary of T-Test Differences Between Males(Group 1) and Females(Group 2)

VARIABLE	T-TEST VALUES						
	GP_1			GP_2			
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Attitude	325	0,34	(1,88)	360	-0,58	(1,65)	2,93	,004	,01
Subjective Norm	324	-0,38	(1,94)	360	-0,89	(1,86)	3,50	,001	,02
Might agree to help test pills but change mind & not take them	323	-1,52	(1,81)	363	-1,05	(2,06)	-3,09	,002	,01
Dr, would give adequate info,- re the study	326	1,45	(1,87)	359	1,81	(1,54)	-2,73	,006	<,01
re the pills	325	1,36	(1,85)	359	1,73	(1,57)	-2,77	,006	<,01
Would worry if felt off colour	323	1,48	(1,79)	357	1,92	(1,53)	-3,42	,001	,01
Would be risking health by - possible side effects	325	1,16	(1,55)	358	1,63	(1,39)	-4,21	,000	,01
unforseeen long-term effects	325	1,52	(1,44)	359	1,93	(1,24)	-3,95	,000	,02

There were no differences between the sexes in outcome evaluation measures and the only beliefs which showed significant differences on the basis of strength-evaluation crossproduct measures, were those of getting adequate information about the study ($t = 2.85$, $p = .005$), and about the pills being tested ($t = 2.75$, $p = .006$). In both cases the higher crossproduct values came from women.

6.2 SAMPLING SOURCES

Respondents were grouped according to their sampling source with those sampled from the electoral roll comprising group 1, and those from medical sampling sources, group 2.

Chi square tests revealed no significant differences between the groups in terms of sex, age groups, or usual employment.

Regarding screening, t-tests showed statistically significant differences in respect of intention, attitude, norms and a few behavioural beliefs. In each case, the more positive reponses were given by respondents from the medical sampling sources. The difference in screening intention was also demonstrated by the less powerful chi square test.

In respect of clinical trials, neither chi square nor t-tests showed a significant differences in respect of intention to participate in trials of 'new pills'. However, chi square tests did reveal a significant difference between the groups regarding established pills, as summarised in table 41.

Significant differences shown by t-tests, were those of personal norm, percieved likelihood of trial invitation and some behavioural beliefs. It was also found that 'medical' respondents were significantly more likely than electoral roll respondents to indicate a willingness to participate in trials if at high risk of a heart attack or stroke.

No other differences were observed for any other circumstances under which trial entry would be accepted. Results for 'new' and 'other' pills were very similar. The results of significant tests relating to sampling source groups are summarised in tables 42 to 47.

SAMPLING SOURCE T-TESTS

SCREENING

TABLE 41 Summary of Crosstabulations Screening Intention (1=Strongest; 2= Weaker Positive) By Sampling Source (1=electoral roll; 2= medical sources)

		SAMPLING SOURCE		
				ROW TOT
SCREENING INTENTION		1	2	
1	Observed	150	136	286
	Expected	171,4	114,6	(45,5%)
2	Observed	227	116	343
	Expected	205,6	137,4	(54,5%)
	COL. TOT	377	252	629

χ^2 = 11,68 df=1 p=,001 λ=,069 (with source dependent)

TABLE 42 Summary of T-Tests on Intention, Attitudes & Normative Beliefs Between Group 1 (electoral roll respondents) & Group 2 (medical source respondents)

VARIABLE	T-TEST VALUES								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Intention to participate	323	1,93	(1,35)	371	2,27	(1,22)	-3,46	,001	,02
General attitude	323	2,49	(0,85)	369	2,68	(0,68)	-3,24	,001	,01
Subjective Norm	322	2,03	(1,11)	370	2,25	(1,03)	-2,67	,008	<,01
Personal Norm	323	2,23	(1,06)	371	2,44	(0,98)	-2,83	,005	,01
Likelihood of invitation	322	-0,61	(2,10)	370	-0,12	(1,95)	-3,18	,002	,01

TABLE 43 Summary of T-Tests Showing Significant Differences Between Groups 1 & 2 (Above) Regarding Behavioural Belief Strength

VARIABLE	BELIEF STRENGTH								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Be told best precautions	321	2,37	(0,99)	362	2,58	(0,81)	-3,08	,002	,01

TABLE 44 Summary of T-Tests Showing Significant Differences Between Groups 1 & 2 (Above) Regarding Outcome Evaluations

VARIABLE	OUTCOME EVALUATION								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting peace of mind-"all clear"	314	2,57	(0,85)	360	2,72	(0,63)	-2,61	,009	<,01
Getting lecture from doctor	315	0,90	(1,71)	357	1,26	(1,68)	-2,74	,006	<,01

TABLE 45 Summary of T-Tests Showing Significant Differences Between Groups 1 & 2 (Above) Regarding Belief Strength/Evaluation Crossproducts

VARIABLE	STRENGTH/EVALUATION CROSSPRODUCTS								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Told best precautions	315	6,40	(3,10)	353	7,11	(2,85)	-3,09	,002	,01
Spured to healthier living	312	3,97	(3,74)	355	4,77	(3,72)	-2,77	,006	<,01

CLINICAL TRIALS

TABLE 46 Summary of Crosstabulations Intention To Participate in Clinical Trials Of Established Pills (1=positive; 2=negative) By Sampling Source (as above)

		SAMPLING SOURCE		
				ROW TOT
CLINICAL TRIAL INTENTION		1	2	
1	Observed	136	109	245
	Expected	148,9	96,1	(44,7%)
2	Observed	197	106	303
	Expected	184,1	118,9	(55,3%)
	COL. TOT	333	215	548

χ^2 = 4,74 df=1 p=,029 λ=,012 (with source dependent)

TABLE 47 Summary of T-Tests on Personal Norm and Perceived Likelihood of Trial Invitation Between Sampling Source Groups 1 and 2 as Detailed Above

VARIABLE	T-TEST VALUES								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Personal Norm	319	-0,29	(2,06)	367	0,11	(2,04)	-2,57	,010	<,01
Likelihood of invitation	319	-1,96	(1,38)	368	-1,30	(1,80)	-5,49	,000	,04

Corresponding tests regarding 'other pills' were very similar and are given in appendix 21)

TABLE 48 Summary of T-Tests Between Groups 1 & 2(Above) Re Intention to Participate in Clinical Trials If At High Risk Of A Cardiovascular Event

VARIABLE	T-TEST VALUES								
"I'd be willing to help test pills"	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
If personally at high risk of a cardiovascular event - 'New Pills'	321	1,02	(1,89)	367	1,40	(1,63)	-2,78	,006	<,01
'Other Pills'	319	1,52	(1,69)	366	1,88	(1,39)	-3,06	,002	,01

TABLE 49 Summary of T-Tests Showing Significant Differences Between Groups 1 & 2(Above) Regarding Behavioural Belief Strength

VARIABLE	BELIEF STRENGTH							
	GP_1			GP_2				
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	318	1,40	(1,82)	367	1,84	(1,59)	-3,36	,001	,01
Getting info, re the pills	318	1,34	(1,85)	366	1,74	(1,58)	-3,09	,002	<,01
Risk acquired resistance	318	0,72	(1,68)	366	0,32	(1,66)	-3,13	,002	,01
Might be taken off good pills	316	0,46	(1,99)	358	-0,12	(2,01)	3,83	,000	,01

TABLE 50 Summary of T-Tests Showing Significant Differences Between Groups 1 & 2 (Above) Regarding Strength/Evaluation Crossproducts

VARIABLE	STRENGTH/EVALUATION CROSSPRODUCTS							
	GP_1			GP_2				
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	313	3,96	(5,20)	365	5,13	(4,68)	-3,07	,002	,01

There were no other significant differences (<.01) between the groups in terms of belief strengths, outcome evaluations, or crossproduct measures.

7. QUALITATIVE RESULTS - SUMMARY OF ADDED COMMENTS

Approximately 20% of respondents made additional comments on their questionnaires. All of these comments related to clinical trials.

The issue that generated the most comments (36) was that of possible drug side effects. A typical comment of this type was: "It would all depend upon what the possible side effects might be". Three more people asserted that "Bad press has put me off pill testing" and another respondent stated that "New pills taken by my spouse ended in 12 months of sheer misery and life-long medication."

Possibly allied to worries about side effects, were comments which indicated a general dislike of drugs. 33 people made comments of this sort, for example: "I don't like taking pills at all, for anything, if they can possibly be avoided." One respondent also said "we don't believe in chemical poisons, we rely on healthy living and herbal remedies."

A third type of comment related to personal awareness of the need for trials, but reluctance to become trial entrants. Such comments were typified by the respondent who stated "I'm basically selfish - I know these things have to be tested, but preferably not on me." In all, 24 people asserted such feelings. Two women stated that they would not put themselves at risk by trial entry until their children were grown up, and one 76 year old felt that the over 75s should be exempt from pill testing.

However, 9 respondents commented that it was better to test pills on humans than animals, though one felt that "all new pills should be tested out on sex attackers and viscious murderers."

Other comments related to the circumstances under which trial entry might be considered. Six people made remarks to indicate that it was very difficult to give answers to such a hypothetical question, and some suggested that it would boil down to the force of argument and personality of the person asking for co-operation. Fifteen people also commented that they would be more likely to agree to help test pills if they felt sure that their doctor would give them all the information (s)he had.

Only two people made direct comments on the extent of the faith they had in their GPs. One said "my doctor is a responsible person and wouldn't ask me to test pills unless he thought they were pretty safe." The other said "I don't have a lot of faith in doctors and what they tell you, or what they know. Look at the problems with Debendox."

In all 15 people made comments to the effect that their own health status would influence their decisions re trial entry. Eight stated that they would do anything to help their current problems (mostly arthritis), or to improve their quality of life. A further 7 supported the views of the respondent who said "If I was really ill I'd probably have a more co-operative attitude and do anything I thought might help." Another respondent said "If I was seriously ill, I'd have nothing to lose - even if the pills wouldn't help me I'd help test for side effects." Interestingly, one person commented that it is invalid to test pills on healthy people as they may well react differently to people in whom the pill would be used - ie the unhealthy.

Four people asserted that the thought of being able to help someone who was very ill would be a great incentive to help in pill testing - especially if that person was a member of their own family.

Finally, a few comments were made concerning financial remuneration and compensation in the case of trial-related sequalae. Eleven people suggested that they might consider trial entry if they were paid a lot of money for their services, though as many again were concerned about the need for adequate legal cover and current lack of organisation for compensation if things go wrong.

8. SUMMARY OF RESULTS

The results of this study showed a very similar pattern to those of the previous study in respect of attitudes and participatory intentions towards screening and clinical trials for cardiovascular risk reduction.

For both screening and clinical trials, attitudes and subjective norm were found to be quite strongly associated with behavioural intention. However, in each case, the predictive association was strengthened by the inclusion of personal normative beliefs.

T-tests showed that respondents indicating the strongest positive intention to participate in screening, differed from those expresssing either of the two weaker positive intentions to participate, on almost all behavioural belief variables. Furthermore, the two groups were very well differentiated by discriminant function analysis which accounted for approximately half the variance.

In respect of clinical trials, t-tests again showed significant differences on almost all behavioural belief variables, between respondents who had indicated some degree of positive intention and those who had indicated some degree of negative intention to participate. Discriminant function analyses between the two groups yielded very good results.

There was no significant difference in response rates, or socio-demographic characteristics, between medical and non-medical sampling sources. However, other important differences were found. 'Medical' respondents expressed more positive intention, attitude, subjective and personal norms in respect of participation in screening. They also indicated a more positive personal norm in respect of clinical trial participation.

Other sub-group investigations revealed a difference in screening intentions between different age groups and a few other differences for clinical trials between the sexes.

Qualitative results were comprised of the additional comments people had appended to their questionnaires. They pertained only to clinical trial participation, and basically served to substantiate quantitative findings.

CHAPTER 4

DISCUSSION

The main objectives of the second study were to assess the reliability of the previous study findings; and to gain deeper understanding of the influential role of factors associated with participation in screening and clinical trials. It was also intended to explore the utility of the Behavioural Intention Model (BIM) for a postal survey of a general public sample; and to investigate sampling source influences.

To recap, the specific aims of the study were:

(1) To assess the reliability of preliminary study findings

(2) To assess the power of factors influencing participation in screening and clinical trials for cardiovascular risk reduction

(3) To identify any socio-demographic variables associated with attitudes beliefs or participatory intentions

(4) To assess the value of the BIM for the prediction and understanding of screening and clinical-trial participation intentions; and its utility for a postal survey of a general public sample

(5) To compare response rates, and responses, from medical and non-medical sampling sources when survey participation and questionnaire completion is anonymous.

In the following discussion of results and their implications, the first study aim will be given first consideration.

Secondly, attention will be paid to the immediate determinants of behavioural intention, as prescribed by the Behavioural Intention Model. Because of a great level of similarity, measures pertaining to both screening and clinical trials will be discussed here, as will a common problem with normative belief measures.

In subsequent discussion of study results, independent focus will be given to specific factors identified as influencing participation in screening, and clinical trials. This will include consideration of socio-demographic differences.

The penultimate section of the discussion will concentate on sampling source differences, and finally some contemplation of the BIM itself will be undertaken.

1. RELIABILITY OF PRELIMINARY STUDY FINDINGS

1.1 OVERVIEW

Perhaps the first point to note, was the similarity of unprompted beliefs elicited from interview informants of the second study, to those deliberately raised for discussion with preliminary study informants. This suggests that relevant questions were asked on the first instrument, and that most salient beliefs were tapped.

The main findings of the preliminary exploratory study were: a widespread favourability towards the general concept of, and participation in, screening for cardiovascular risk; but more diverse feelings about clinical trials. Also, whilst lack of opportunity seemed to represent the major barrier to screening participation, several factors associated with participation in clinical trials were identified as potential deterrents.

These results were broadly replicated in the follow-up study, in terms of both direction and degree.

Although the response rate to the second study was substantially lower than that achieved for the first study, the sample was still considerably larger (695 compared to 442); and more representative of the general population in terms of age distributions. The over-representation of elderly which obtained in the preliminary study, was countered in the follow-up investigation. Thus it would seem that the preliminary findings were not distorted by the age characteristics of its respondents, but fairly representative of the views of people prepared to contribute to this type of survey.

1.2 FINDINGS RELATING TO PARTICIPATION IN SCREENING

In the preliminary study, more than 90% of respondents indicated positive attitudes towards: the general concept of screening for cardiovascular risk; personal participation in such screening; and frank diagnostic information regarding risk status. These proportions were echoed in the second study where corresponding items also elicited positive responses from over 90% of the sample. In these respects, the findings of both studies accorded with previous finding (eg. by O'Brien and Hodes, 1979; Cartwright and Anderson, 1981; Ley, 1982).

It was also apparent from the first study, that being at cardiovascular risk would motivate most people (88%) to follow advice about lifestyle changes. Again these findings were supported by those of the follow-up study where 82% of respondents indicated that a screening check would act as a spur to change to healthier habits.

In fact, the evidence shows that the degree of favourability expressed towards screening is rarely matched by take-up of screening services offered (eg. O'Brien and Hodes 1978; King 1982). Nevertheless, it was reassuring to observe such similarity in reported intentions and attitudes between the two studies.

Preliminary study findings showed no evidence of any factors which might represent widespread deterrents to participation in screening, neither did the second study. Rather, results again suggested that survey respondents, at least, would be keen to participate if given the chance.

1.3 FINDINGS RELATING TO PARTICIPATION IN CLINICAL TRIALS

As with screening, the results of the second study also offered broad support for those of the first, concerning intentions and attitudes towards participation in clinical trials for cardiovascular risk-reduction. However, there were some differences between the two studies which made direct comparisons between them a little difficult.

Firstly, in the preliminary study, respondents were asked to indicate their *general* attitude towards GP involvement in clinical trials; and their personal intentions to participate if *'at risk'* of a cardiovascular event. In the second study, the attitude measured was that towards *personal participation* in trials; whilst for participatory intentions, two 'risk' options (high risk and any extra risk) were explored.

Not surprisingly, the general attitude item of the first study elicited more positive responses than those obtained for the corresponding second study item of attitude to personal participation (50% compared to 37% 'new pills' and 41% 'other pills').

Because no degree of risk had been stipulated in the preliminary study, it was decided that the most comparable measures of intention in the second study would be those pertaining to intention if at *any* extra risk of a heart attack or stroke. Although this option corresponded most closely to that of the first study, it also yielded the greatest difference in intentions regarding 'new' and 'other' pills. Nevertheless,

the proportion of respondents indicating a positive intention, was similar for both studies (60% in the first; 58% and 70% for 'new' and 'other' pills respectively, in the second).

The similarity of study findings was even greater in respect of reported attitudes to clinical trial participation if already on other medication. Approximately half the respondents in each study indicated objections to trial participation, if already on other medication (48.5% in the first study; 49.5% 'new' and 45.4% 'other' in the second).

Another area of difference between the two studies related to the specification of 'pill type'. Whereas there had been no distinction between 'new' and 'other' (established) pills in the first study, this differentiation did apply in the follow-up investigation. Therefore, analysis of variables pertaining to clinical trial participation, necessitated separate tests for 'new' and 'other' pills.

Most of the analyses performed for the two pill types were remarkably similar, although BIM values relating to 'new' pills were generally marginally higher than those for 'other pills'. However, these differences were so slight that, in most cases, only tests pertaining to 'new' pills were presented in the main text. Except where notable differences applied, it was decided to let 'new' pills represent both types, because unless specified as otherwise, people typically equate 'pill-testing' with new drugs. Since no specification of drug type had been made in the preliminary study, it was considered prudent to adopt this approach if comparisons were to be made between the two study findings.

Therefore, in the following discussion of results, data discussed will, in the main, be those pertaining to clinical trials of 'new' pills. However, where differences did apply, all results were presented and will be discussed.

In spite of the problems posed by study differences, it was possible to make some assessment of the reliability of other preliminary findings. In particular, support was found for the initial identification of potential deterrent factors - eg. worries about side-effects, acquired resistance and possible discontinuation of current effective medication. In the original study, worries about possible side effects of drugs represented the major potential deterrent to clinical trial participation. This finding was replicated in the subsequent investigation.

71% of initial study respondents expressed worries about possible side effects of drugs, whilst 73% of subsequent respondents indicated a belief that participation in clinical trials would entail a risk to health by possible side-effects (70% evaluated such risk negatively).

Regarding acquired resistance, 64% of preliminary respondents felt that pills taken prophylactically, might not work when really needed. This belief was expressed by 49% of second study respondents, and evaluated negatively by 58%.

Another potential deterrent to trial entry identified in the first study, was that of worries about being taken off 'good' pills already being taken. Although less than half the initial study respondents (46%) stated that this would be a worry, a further 20% expressed uncertainty regarding the issue. In the follow-up study 40% of respondents indicated a positive belief that discontinuation of current medication might be an outcome of trial entry, and 26% expressed uncertainty. This outcome was evaluated negatively by 57% of respondents.

In both studies, most respondents (84.2% & 85.4% respectively) indicated that they felt able to ask their doctors for any information they wanted.

2. DETERMINANTS OF INTENTION AND THEIR RELATIVE IMPORTANCE

In addition to testing the reliability of the findings from the first study, the second study was intended to provide deeper understanding of the relationship between influencing factors and behavioural intention.

Since this understanding was sought within the framework of the Behavioural Intention Model (BIM), a series of investigative analyses were performed. In the first instance measures of association were obtained for behavioural intention and its immediate determinants - ie attitudes and subjective norms. In line with Budd's (1984) suggested amendment of the BIM, the role of personal normative belief in intention was also investigated. Subsequent analyses were undertaken: (a) to provide measures of association between attitudes and norms and their antecedents; and (b) to explore the relative power of individual beliefs in the evolution of intention. The same analyses were performed for both screening and clinical trial participatory intention.

Before continuing with independent discussion of factors associated with screening and clinical trial participation, two points of similarity should be noted and considered together. The first applied to both the

pattern of relationships between model components and the weightings assigned to the immediate determinants of intention. The second was a substantial level of missing data for normative belief measures which essentially precluded meaningful interpretation of these elements.

2.1 INTENTIONS, ATTITUDES AND NORMS

Firstly, there was a striking similarity of the two activities investigated, regarding the strength and patterns of association between model components. Multiple regression analyses (MRA) showed that in each case, the strongest relationships were between intention, attitudes and norms. Predicitive associations between behavioural beliefs and attitudes, and between normative beliefs and subjective norms, were weaker, but still of a reasonably high level. More detailed consideration of the behavioural belief/attitude relationship will be undertaken later (section 3 below), in the separate discussions of factors influencing participation in screening and clinical trials.

Within the orthodox BIM, attitudes and subjective norms together accounted for 47% of the variance in screening intention (R=.687); and 54% of the variance in intention to participate in clinical trials (R=.732). In both cases, weightings and R^2 changes showed that attitudes contributed substantially more than subjective norms to the prediction of intention.

When measures of personal normative beliefs were added to those of attitude and subjective norm, the prediction of intention was considerably enhanced. In these functions, 57% (R=.753) of the variance in intention to participate in screening was accounted for, as was 64% (R=.800) of the variance in intention to participate in clinical trials. Equation values showed that personal norm contributed most to the prediction of intention, whilst the importance of subjective norm was greatly diminished.

The high contribution of personal norm and the low value of subjective norm as discriminants of behavioural intention, was further demonstrated by the results of discriminant function analyses (DFAs).

This similarity of influencing factors may have been a function of the fact that the same people provided the responses for both topics, and that these informants were peculiarly uninfluenced by subjective norms. Alternatively, it seems equally likely that subjective norm really does play a minor role in determining behavioural intentions of this type;- or that it adds nothing to the model if personal norms are included.

In the introduction to this chapter, various recent amendments to the BIM were considered. Amongst these, arguments were offered for the inclusion of personal norm at the expense of subjective norm.

Fishbein and Ajzen dropped the personal normative belief item from their original model because it seemed to represent a reiteration of intention. However, Ajzen (1985) later proposed its reinstatement on the grounds that personal norms were probably determined by normative beliefs, and thus represent adequate measures of subjective norm on their own.

Other work (eg. by Budd et al, 1984; 1985) has also offered convincing evidence for the importance of personal norm (as independent of intention), whilst casting doubt on the value of subjective norm. Indeed, Budd and his colleagues proposed that nothing would be lost from the model if personal norm was included and subjective norm omitted.

Certainly, the results of this study would appear to offer support for this proposition, although the disparate weightings of personal and subjective norms do not support Ajzen's suggestion that they are repeated measures of the same thing.

Rather, it would appear that subjective and personal norms are distinct entities, and, as Budd suggested, that personal norms are more salient to behavioural decisions than subjective norm. These two norms may well be influenced by common factors - ie. normative beliefs - but when formed they represent different concepts. Once people have established their personal norm, this would seem to take precedence over subjective norm as a determinant of behavioural intention.

It is possible that this apparent distinction between subjective and personal norms is an artificial one, which reflects little more than a reluctance to admit (even to oneself) that one's actions are influenced by others. Alternatively, it may be that it is a real distinction, whereby normative beliefs are a partial determinant of personal norm, but not the sole influence.

If this is so, it might be expected that congruence of the two norms will vary according to the nature of the intended behaviour, and the extent to which the opinions of 'important others' coincide with those of the individual. Just as some behaviours may be expected to be influenced more strongly by attitudes than subjective norms (and vice versa); so some behaviours must be expected to be under a considerably greater influence of personal than subjective norms. This may be especially so when the behaviour has very personal consequences, as in screening or clinical trial participation; and/or when there is a clash of opinion between the individual and his or her important others.

When no such clash exists, measures of one norm may adequately represent measures of the other. However, when there is a difference between the two norms, a single measure may not suffice. Thus, although the evidence indicates the superiority of personal norm over subjective norm as an influence on behavioural intention; it does not necessarily justify the exclusion of the latter from the BIM. After all, for some people, or under some circumstances, the need to comply with subjective norm may be greater than the influence of personal normative beliefs.

Of course, it may be that for such people, personal norm will closely reflect subjective norm, but this may not necessarily be the case. It is quite possible for people to hold personal norms which differ from their subjective norms, yet be in situations which demand compliance with their perceptions of the feelings of their important others.

This is perhaps particularly so when the action may have direct consequences for those others, or when the individual is dependent upon them. In such situations, subjective norms might be expected to exert a stronger influence on behavioural decisions than personal normative beliefs. Thus, if measures of subjective norm were dropped from the model, we might be left with a strange situation in which personal norm, and probably behavioural beliefs, indicated a behavioural intention, contrary to that actually expressed. By including measures of both norms, and a measure of motivation to comply with the conglomerate 'important others', a better understanding of intention might be achieved.

As a final point about personal norm, it should be noted that these study results also support Budd's earlier assertion that it is not merely a reiteration of intention. Although in the study reported here, personal norm was by far the strongest influence on intention, it was not synonymous with it. Thus it would seem that personal norm should be included in the BIM, but as an addition to intention and subjective norm, not as a substitute for either.

2.2 NORMATIVE BELIEFS

The second point of similarity between measures pertaining to screening and clinical trial participation, was that of a substantial level of missing data for normative belief items. Several respondents declined to answer these items at all, and considerable use was made of the 'not applicable' option. This problem applied to both screening and clinical trial measurements.

It is inevitable that in a heterogenous sample of the type obtained, some referents in the modal set will be inapplicable to some respondent. Not all will have a spouse/partner, living parents, or children. Similarly, the children of some respondents will be too young to apply as referents. Therefore, the 'not applicable' option was offered in an attempt to differentiate missing values due to oversight or deliberate answer-refusal, from missing values due to the referent being inapplicable to the respondent. However, it was evident that the option had not always been used as intended. For example, some respondents indicated an opinion for a given referent, but marked the 'not applicable' option for motivation to comply with that referent. Also, a few respondents commented that ***they*** decided their own actions and that the opinions of others were irrelevant to their decisions.

In the light of these findings, it is not surprising that personal norm contributed so highly to behavioural intention, and subjective norm so little. Certainly, they add to the doubt about the value of estimating motivation to comply with referents, expressed by Young and Kent (1985).

Regretably, this high level of missing data precluded any meaningful interpretation of the relationships between normative beliefs and subjective norms. It also effectively prevented any real comparisions of normative and behavioural beliefs; either in relation to participatory intention, or their immediate successors in the model.

However, as subjective norm played such a small part in determining behavioural intention for both screening and clinical trials, this lack of data did not pose such a major problem for prediction and understanding as it might have done, had subjective norm been a more influential factor.

3. FACTORS INFLUENCING SCREENING

It has already been said that personal norms and attitudes were the most important factors influencing intention to participate in screening for cardiovascular risk. This was shown not only by MRA results, but also by the results of DFAs performed to assess how well behavioural beliefs, attitudes and norms, differentiated respondents expressing the strongest intention to participate, from those expressing weaker intentions.

It was necessary to investigate these two groups rather than intending participants and non-participants, because of the very skewed distribution of intention measures. Approximately 90% of respondents indicated some degree of positive intention to participate in screening for cardiovascular risk, against just 6% who indicated some degree of negative intention.

On reflection, it was not really surprising that such high levels of participatory intention were given. After all, screening of this kind does not require a visit to hospital or specialist clinic, and entails little personal discomfort or embarassment. Although it does carry with it the possibility of risk identification, it was evident from other responses that informants evaluated such identification positively and associated it with the prescription of preventive measures. Thus from a hypothetical standpoint, such screening offers 'something for nothing' and is likely to attract widespread approval.

Nevertheless, only half the respondents indicated the strongest degree of intention to participate, so it was considered possible that there might be some differences between these respondents and others who had indicated weaker positive intentions. Therefore, as described in the results section, such differences were investigated and found to obtain. Consequently, respondents expressing either of the two weaker categories of intention, were classified as 'non-participants' for the purposes of subsequent investigation of the power of influencing factors.

From DFAs it was found that the two groups could be well differentiated on the basis of attitudes and norms. 93% of respondents indicating the strongest participatory intention were accurately predicted to fall into this category and 72% of weaker intenders were accurately predicted to fall into the second group. As before, personal norm was found to be the most important variable in the prediction of intention, and subjective norm the least important.

Similar levels of accurate predictions were achieved by DFAs employing behavioural beliefs as well as measures of attitudes and norms, but personal norm and attitude were the only variables which yielded standardised canonical correlation values greater than .300. No behavioural beliefs appeared to be of any substantial value to group differentiation. Rather, when behavioural belief items were used as the only discriminant variables, a majority of 'non-participants' were misclassified as potential participants.

Indeed, although attitudes clearly played an important part in determining screening intention, attempts to identify the most important behavioural beliefs underlying attitudes were not very successful- yielding differences in degree, rather than direction. Of course, the two groups also differed only in terms of degree, and not direction, so this was, perhaps, to be expected.

MRA showed that just 18% of the variance in attitudes was accounted for by behavioural beliefs, and only 3 of the 13 belief items entered were included in the final equation. These were beliefs that screening participation would: (1) help the individual to stay fit and healthy for longer; (2) give a definite indication of risk status; (3) give peace of mind if no increased risk were detected.

Because personal norm was so highly associated with intention, it was decided to explore the association of behavioural beliefs with personal norm, in an attempt to identify beliefs influencing this component. In fact, the results of this MRA were almost identical to that obtained for the prediction of attitude. 19% of the variance in personal norm was accounted for by the same 3 behavioural beliefs of significance in the prediction of attitude, and a further 0.7%, by the inclusion of the additional belief that participation would act as a spur to healthier living.

The direct influence of individual beliefs on intention was also investigated by independent examination of differences in belief strength, outcome evaluations, and crossproduct measures, between intending 'participants' and 'non-participants'.

Analysis of belief strength measures showed that the 'participants' group (those expressing the strongest participatory intention), also held the strongest beliefs that each outcome would be associated with participation. The difference in belief strength between the two groups was statistically significant for all items except those pertaining to advice about changes to drinking, smoking and dietary habits.

Further, the two groups differed significantly in their evaluations of each outcome, with 'participants' showing consistently more positive evaluations than 'non-participants'.

Belief strength-evaluation crossproduct measures, showed significant differences between the two groups for every item except that pertaining to the reduction of drinking; and the overall difference was significant beyond the .000 level.

However, because of the large sample size, and the fact that multiple t-tests were performed, statistical significance alone, could not be taken as evidence of the discriminating power of individual behavioural beliefs. Although the difference in sum of beliefs between the two groups was highly significant, the predicitve association was not very great. The omega square value was only .10 indicating that just 10% of the variance in intention could be accounted for by belief differences.

Most individual omega square values were very low, the greatest accounting for 9% of the variance. This came from the item of most importance in the behavioural beliefs MRA - namely the belief that screening participation would help the individual to stay fit and healthy for longer. The two beliefs which elicited the highest mean scores for outcome evaluations in both groups, were those of peace of mind by an 'all clear' verdict; and being told the best preventive measures to take. Both of these items fit snugly with that of keeping fit and healthy for longer, and suggest the belief that screening will help maintain good health, would be a strong inducement to participation.

These results also concur with the findings of O'Brien and Hodes (1979) who found that people cited: 'it gives peace of mind' and 'prevention is better than cure' as reasons why they regarded screening as a good thing.

It was interesting to note that the salient beliefs associated with screening tended to be positive ones. Items that may have been construed as negative outcomes, eg. advice re lifestyle changes and getting a lecture from the doctor, elicited substantially more positive than negative evaluations.

In fact, with hindsight, and a re-examination of the beliefs elicitation sheet (appendix 13), it would seem that another negative outcome should have been included on the questionnaire. This was a multi-faceted 'dislike of surgery attendance' item which was indicated by a variety of beliefs such as it being difficult or inconvenient to get to the surgery; a dislike of going to the doctor at all if avoidable; concern about lack

of privacy at the surgery; a trust only in one's own GP and not liking the prospect of being seen by other group partners. Individually, these beliefs were elicited from very few respondents, but together, as a 'meta-item' the constituent aspects were mentioned by sufficient respondents to have merited inclusion on the questionnaire. Perhaps, if it had been included, differentiation between strongest and weaker intending participants would have been even stronger.

Nevertheless, the general endorsement of these belief items, indicated that there was little difference between preliminary interview informants and subsequent survey respondents, in terms of factors associated with screening for cardiovascular risk. This may suggest that there really is widespread consensus concerning the benefits of such screening. On the other hand, it may suggest that only those who regard such screening favourably, are prepared to give their time to answering questions about it. In the light of the low response rate to both initial interview requests, and the main survey, this latter suggestion must be taken seriously,

As French (1982) found in her study of breast-screening attendance, participants tend to view screening clinics in a positive light, whilst non-participants tend to view them as places of risk. The high levels of intended participation and positive associations expressed in the survey reported here, would seem to confirm her findings in respect of potential participants, though they gave negligible information about potential non-participants.

However, it seems reasonable to suspect that such people may associate less favourable outcomes with screening participation, or would evaluate identified outcomes negatively. Unfortunately, they may also be those least likely to give interviews, or to complete a questionnaire, about the activity. Thus, there remains a problem of identifying associated negative outcomes in the first place, and assessing their generality amongst potential non-participants in the second. Maybe, unidentified concerns, or an aversion to outcomes such as 'lifestyle change' advice are important factors underlying the mismatch between reported attitudes towards screening and actual screening attendance. However, until they are properly identified they cannot be adequately addressed.

One factor that consistently arises is any consideration of cardio-vascular risk, or screening generally, is that of social class. Apart from the study by O'Brien and Hodes (1979) which found no social class differences between attenders and non-attenders; it has commonly been

found that the higher socio-economic groups are the most likely to attend screenings (eg. Kirscht, 1983). The overwhelmingly positive intentions to participate in screening found in the reported study, came from a sample which was heavily biased towards the higher socio-economic groups.

In fact, sub-group analysis yielded no real differences between 'middle' and 'working class' respondents in terms of screening intention or associated beliefs. However, this finding does not negate the supposition of a social class difference in beliefs, attitudes and intentions towards screening participation. Although the salient beliefs used on the questionnaire were elicited from equal numbers of 'middle' and 'working' class informants, the latter were considerably more difficult to recruit. Thus the similarity of beliefs and intentions expressed by respondents of all classes, may have been an artifact of biased samples in which the manual workers who replied, both to interview requests and the main survey, were not very typical of their class as a whole.

It is a well documented fact (eg. Townsend and Davidson, 1982; Whitehead, 1988; OPCS General Household Survey, 1984) that the lower socio-economic groups tend to engage in lifestyle habits which exacerbate their susceptability to cardiovascular events. Perhaps, as already suggested, an aversion to being 'lectured' about these things, keeps those liable to such advice away from screenings. Alternatively, it may be that such people suspect that evidence of disease will be found, and thus, as French found, view screening attandance as a risk in itself.

Maybe, the reluctance to attend screening or complete questionnaires about it, is due to ignorance or misconceptions of what is involved, or a fatalistic approach to health and illness. The possibilities are clearly plentiful. All that can be said at present, is that social class does seem to be a strong correlate of screening participation, though the underlying reasons why, remain mysterious to preventive health promotors. Thus there is clearly a need for concerted efforts to obtain information from reluctant participants if there is to be any hope of devising appropriate educational and promotional campaigns to encourage them to engage in preventive health behaviours.

As a final point in the consideration of factors influencing participation in screening, it should be noted that respondents under 45 were significantly less likely than expected, to have indicated the strongest participatory intention. The reasons for this remain open to speculation. However, heart attacks and strokes are most readily associated with middle-aged men, and cardiovascular researchers and screening services have typically concentrated their efforts on this

group. It is therefore possible that younger people have got the message that such screening is not really for them.

If this is so, it is a problem that needs resolution since increased vulnerability to cardiovascular disease begins quite early in life, particularly for those with a family history of the disease. For these people early detection of susceptability, and the implementation of habits to avoid non-hereditable risk factors, might substantially diminish their chances of premature death or disability due to a cardiovascular event. Given this, and the apparent weakness of younger people's intention to participate in screening for cardiovascular risk, the need to encourage their participation is obvious.

4. FACTORS INFLUENCING CLINICAL TRIALS PARTICIPATION

The potentency of personal norm, and the weakness of subjective norm as influences on intention to participate in clinical trials, has already been discussed. In addition to the evidence provided by MRA, DFAs also showed that potential trial entrants and non-entrants could be very well differentiated on the basis of attitudes and norms alone. 91% of intending trial participants and 83.5% of non-participants were accurately predicted from knowledge of these variables. When behavioural beliefs were added to the primary determinants of intention as discriminating variables, the levels of accurate prediction remained the same, though as with screening, only personal norm and attitude were of more than very moderate importance to the function.

However, unlike screening, when only behavioural beliefs were used as discriminating variables, it was still possible to differentiate intending participants and non-participants quite well. In this function 82% of participants and 69% of non-participants were accurately predicted from knowledge of their behavioural beliefs. The most important beliefs to the function were those of: (1) serving as a 'guinea pig'; (2) risking health by possible side-effects; (3) contributing to knowledge that might benefit self.

These variables also featured in the MRA equations in which behavioural beliefs were used to predict attitudes and personal norms. Other items entering the final MRA equation were: contributing to knowledge that might benefit others; getting adequate information about the pills being tested; and risking acquired resistance. Overall, 30% of the variance in

attitude and 27% of the variance in personal norm was accounted for by behavioural beliefs.

Interestingly, although the levels of attitude prediction were the same for both 'new' and 'other' pills; and although the same 6 variables were entered into the equations, there was a slight difference in the order of importance of the items for the two types of trials. The most notable difference was the diminished importance of 'contributing to knowledge which might benefit self', as a differentiator of attitude to trials of 'other pills'; compared to its role in the prediction of attitudes to 'new pill' trials. The same diminution in importance of this variable also occured in predictions of personal norm regarding participation in trials of 'new' and 'other' pills.

Beliefs about contributing to knowledge that might benefit oneself, were a major differentiator of both attitudes and personal norms regarding participation in clinical trials of 'new' pills. Contributing to knowldege that might benefit others, played a corresponding part in trials of 'other' pills. T-tests showed that for both pill types, potential trial entrants regarded these outcomes as significantly more likely, and significantly more of a good thing, than did potential non-entrants. On the basis of cross-product measures, the 'contribution' outcomes yielded omega square values of .12 for self, and .10 for others. These were second only to the .19 value obtained for the 'guinea pig' belief.

In the presentation of qualitative results when additional comments were summarised, it was noted that a few people had stated that being able to help others would be an incentive to trial entry, especially if the person aided was a member of the family.

Overall, these results suggested that participation in clinical trials of new pills entails a considerable cost-benefit analysis on a personal level, whilst participation in trials of established drugs is perhaps perceived as less risky, and a venture to be undertaken in a more altruistic light.

Apart from the finding mentioned above, t-tests to establish belief differences between intending participants and non-participants were quite informative. In terms of total belief strength-evaluation crossproduct measures, the two groups were differentiated very well. The only belief item for which there was no significant difference between groups, was that of the possibility of discontinuation of current effective medication.

However, problems associated with interpretations of statistical significance in large samples and multiple t-tests, were outlined earlier when it was stated that significance alone could not be taken as evidence of material importance. Thus, close inspection of group means and omega square values gave the best indications of items associated with participatory intention.

From this approach it was evident that the major deterrents to trial entry were beliefs that participation would incur a risk to health by possible side-effects and long-term effects; and dislike of being used as a 'guinea pig'. Although both groups felt that trial participation would involve some risk due to side-effects and long-term problems, non-participants held much stronger beliefs that these outcomes would obtain.

Similarly, whilst both groups believed that they would be serving as a 'guinea pig' if they took part in clinical trials, non-entrants believed this more strongly, and evaluated such service much more negatively. The omega square value for evaluation measures of this item was .22.

Closer inspection of the 'off good pills' item also proved interesting. Potential entrants and non-entrants did not differ in the strength of their beliefs that participation in clinical trials might result in the discontinuation of current effective medication. Both thought it only slightly likely that this would occur. Both also evaluated such an outcome negatively, but the degree of negativity expressed by potential non-entrants was significantly greater than that reported by potential entrants.

Worries about 'being taken off good pills already being taken' were identified as a potential deterrent in the preliminary study, especially amongst older people, who were perhaps, more likely than younger respondents to be on long-term drug treatments. Although crossproduct measures did not show this to be important in discriminating potential entrants from non-entrants in the second study, the differences in evaluation measures did suggest that it should not be totally disregarded.

This is perhaps especially so in the light of responses given to the item in which respondents were asked if they would take part in clinical trials if already on other medication. Approximately half the sample gave a negative response to this item, and about one quarter expressed uncertainty. Thus it would seem that people might well be reluctant to participate in clinical trials if they were already on drug treatments, perhaps partly because of fears that current prescriptions may be rescinded.

Another interesting finding, which may relate to the issue just discussed, was the general value attached to information. Three items related to this area:- getting adequate information about the study; getting adequate information about the pills being tested; and being able to ask for any information desired. Both groups evalauted these items equally highly. However, beliefs that these items would be associated with trial entry, were significantly stronger amongst potential entrants than non-entrants. Further support for the desire for full information was found in the additional comments that respondents made.

In the general introduction to the thesis (Part I) the importance of good doctor-patient communication was considered at some length, where particular attention was paid to the ethical and methodological implications of inadequate information. It was argued that people cannot give truly informed consent to trial participation if they do not have adequate information on which to base their decisions. Further, if they harbour unresolved worries about participation, or do not fully understand regimen instructions, the chances of defaulting will be increased.

However, whilst there was considerable evidence for public belief in the need for informed consent and full information about treatments (eg. Saurbrey et al. 1984; Cartwright and Anderson, 1981; Ley, 1982); some doubt about the general application of these principles was also expressed (eg. Faulder,1985; Taylor and Kelner, 1987).

The findings of the reported study, indicated that the majority of respondents (in excess of 70%) did believe that they would be given adequate information if asked to participate in clinical trials. Nevertheless, as mentioned above, this belief was held with significantly stronger conviction by potential participants than their non-participant counterparts. Thus it must be considered that doubts about recieving adequate information might pose a barrier to trial entry.

This is especially so, given the obviously influential role of the 'guinea pig' factor. Of all belief items, it was the single most important discriminator in each test of group differentiation. It was also the most important item in predicting attitudes to trial participation; and the second most important in the prediction of personal norms. Of course, individual interpretations of 'serving as a guinea pig' may well differ - certainly study results show that such service is not always evaluated negatively. However, it seems reasonable to suggest that to many people, it implies a situation in which one is

'used' - not necessarily to one's own advantage- and in which one is not fully informed of all aspects of the role.

From other results, it appears that one such aspect could be the possible side effects of trial drugs. Over 70% of respondents believed that clinical trial participation would involve a risk to health by possible side effects, and over 80% believed that trial drugs could have long-term consequences. Although just under half the respondents indicated a positive belief that prophylactic administration of drugs might lead to acquired resistance, more than a quarter expressed uncertainty about this issue.

The level of concern expressed about side effects was almost identical to that found in the preliminary study, and confirms this issue as a potential deterrent to participation in clinical trials. However, it was noted in the discussion of preliminary study results, that this need not represent an insurmountable problem. It has already been shown that adequate information and forewarnings of possible side effects can help decrease regimen defaulting (eg. Myers and Calvert, 1978), especially if information is given in both verbal and written forms.

Apart from the fact that potential trial entrants have a right to all available information about trial drugs, the willing impartation of such information might well diminish the 'guinea pig' feeling that trial participation seems to entail. Certainly, such a practice would enhance the chances of obtaining real informed consent and, on available evidence, would not detract from regimen compliance once participation was secured. If, in the recruitment process, the issues of acquired resistance and discontinuance of current effective medications were also addressed, initial recriutment and continued compliance might be further increased.

Last, but not least, there were some interesting statistically significant differences between males and females which are worthy of note.

The first difference pertained to attitudes and subjective norms. Whilst the mean score for males showed a slightly favourable attitude towards trial participation, that for females showed a slightly negative attitude. Also, whereas both sexes indicated that their important others would be against their taking part in trials, women perceived this antipathy to be significantly greater than did men. It was not altogether clear why this should be so, but a comment by one woman, to the effect that she would not jeopardise her health until her children were grown,

might give some clue to the finding.

Another interesting difference between the sexes was found for the item which asked about the possibility of initial agreement to trial entry, with subsequent non-compliance. Mean scores showed that both sexes thought it unlikely that they would agree to entry then change their minds and not take the pills, but women found this possibility significantly less improbable than did men. Women were also significantly more likely to associate trial entry with side effect and long-term risk, and worry if they felt 'off colour' during the course of the trial. Interestingly though, they had greater faith that their doctors would give them adequate information about the study and pills being tested.

Perhaps, their greater faith regarding information countered their greater concern about side effects, so that the overall intentions were equalised. However, it is also possible that their less staunch denial of possible non-compliance represented a forwarning of what might occur if their faith in receiving adequate information was not met.

5. COMPARISON OF RESPONSES FROM MEDICAL AND ELECTORAL ROLL SUB-SAMPLES

In the general introduction to the thesis (part I), it was stated that published medical surveys typically achieve high response rates. It was also stated that research has shown there to be a greater response rate to such surveys when they are associated with the sampling pool's GPs (Smith et al, 1984). However, another observation made, was that use of follow-up is frequently quite extensive, and true anonymity rarely seems to apply. It was further argued that this approach may induce some feelings of coercion to respond, or yield artefactually positive responses due to patients' reluctance to jeopardise their relationship with their doctor.

If the high response rates associated with GP-endorsed studies are a function of patients' perceptions that they may be identified, such study results must be regarded with some scepticism. Under these circumstances the value of even very high response rates would need to be re-assessed. Therefore, it was decided to test the superiority of response rates to GP-endorsed studies when true anonymity, precluding follow-up, applied.

In order to perform this test, half the potential respondents were drawn from the electoral roll and half from the practice lists of four group

practices. All respondents were informed of their sampling source on the canvassing letter, and all were assured of complete anonymity. In addition, potential respondents drawn from GP lists received a covering note from the doctor reiterating respondent anonymity and stressing the doctor's non-involvement with the study.

Analysis revealed some very interesting differences between those sampled from medical and non-medical sources. Firstly, although the response rate from medical sampling sources was superior to that from the electoral roll, and statistically significantly so, the actual difference was not very great - just 6%. More importantly, there were differences between the groups for individual response items which implied an effect due to sampling source. These differences could not be attributed to age, sex or occupational categories, since the sampling source groups did not differ in any of these respects. Therefore the differences observed may be assumed to have been under the direct influence of repondents' knowledge of the sources from which they were drawn, even though it was made very clear that individual respondents could not be identified.

Regarding screening, the differences were quite informative. Intention and its immediate determinants according to the BIM, were all significantly different. Also, 'medical' respondents expressed significantly stronger beliefs that screening participation would result in them being told the best preventive measures to take; and they evaluated a 'lecture from the doctor' significantly more highly, than respondents drawn from the electoral roll. Cross-product measures also showed them to score more highly on the belief that they would be spured to a healthier lifestyle.

It must be acknowledged that omega square values were minimal, and that it is possible that the powerful t-test may have picked up marginal effects which, though statistically significant, were materially insignificant. However, without exception, respondents drawn from medical sampling sources reported more positive responses. Furthermore, differences in screening intention were also demonstrated by the more robust non-parametric test of chi-square. Again, lambda values were not very great, (only .07 with source dependent). Nevertheless, it suggested that sampling source did have an effect on responses, albeit a rather weak one in terms of predictive value.

Sampling source had no effect on reported intentions to participate in clinical trials of new pills. However, chi square tests showed that 'medical' respondents were significantly more likely than their electoral roll counterparts, to have indicated a positive intention to participate in trials of established drugs. This difference also applied, for both

drug types, in relation to the specific circumstance of participation if at high risk of a cardiovascular event.

Respondents sampled from medical sources clearly reported stronger feelings that they *ought* to take part in trials if asked to do so. Interestingly, whilst both groups considered an invitation to trial entry to be unlikely, the 'medical' group considered such an invitation to be significantly less unlikely than did the electoral roll group.

In the light of previous findings, it was very interesting to note that whilst there were no differences between the groups regarding evaluation of associated outcomes, there were significant differences in the strength with which important beliefs were held. Respondents sampled from medical sources reported significantly stronger beliefs that they would receive adequate information about the trial and drugs being tested; and significantly weaker beliefs that acquired resistance or discontinuation of current effective treatments would be a consequence of trial participation.

A simple, immediate explanation for these observed differences is difficult to provide. Overall, they would seem to suggest that 'medical' respondents were reassuring their doctors that they were 'good patients' who had great faith in them and would follow their advice.

It is tempting to propose that these findings reflect a bias due to fear of recognition, but such a simplistic argument is not really tenable. After all, questionnaire completion was totally anonymous so, theoretically, source should not have had an influence on responses, since individuals could not be indentified and were thus immune to any possible reprocussions of their answers. In addition to anonymity, canvassing letters also stressed non-involvement of GPs. However, the results showed that source did have an effect on responses, thus something about the sampling source of respondents was operating to influence answers given.

Perhaps, in spite of the efforts made to stress anonymity, some doubt about this issue remained. Alternatively, it might be that the association of the GP with the survey, created a slightly different frame of reference within which responses were generated. Yet again, it might have been that many 'medical' respondents were prompted to respond by a recent satisfactory consultation with their GPs, thus colouring their answers. The response rate from medical sources was not dramatically superior to that from the electoral roll, so perhaps, there was a bias of this sort, which might not have been found had greater numbers of 'medical' respondents replied. As a final thought, it was also possible

that people sampled from medical sources felt more strongly that GPs would be given a summary of study findings, and be spurred into appropriate actions.

Whatever the causes, some doubt must be cast upon the wisdom of collecting non-anonymous data in medical studies, and on the benefits of using GP endorsed canvassing approaches. These study findings clearly indicate a possible biasing of results, which reflect more positive reponses than those collected from non-medical sources. If this effect is found when questionnaire completion is anonymous, and without the extra effects of follow-up, it must be considered that the effect would be even more pronounced when response is not anonymous, or is not perceived to be such, perhaps by the extentsive use of follow-ups so frequently used in medical surveys.

6. CONSIDERATIONS OF THE BEHAVIOURAL INTENTION MODEL

Although some problems were encountered, the results of the second study justified the choice of the BIM as the adopted predictive model. The prediction of intention, for both screening and clinical trial participation, was of an encouragingly high level and certainly superior to that obtained from a tentative use of the Health Belief Model in the preliminary study. As well as allowing assessment of the relative power of immediate determinants of intention, application of the BIM also yielded valuable information regarding the identification of the most important beliefs underlying intentions.

However, with regard to both behaviours, the most potent predictive factor was that of personal normative beliefs. In fact, this variable does not appear in the orthodox version of the BIM and its inclusion represents a recent amendment to the model proposed by Budd et al (1984, 1985) and Ajzen (1985). Nevertheless, as discussed earlier, the arguments for its inclusion are persuasive, and were clearly supported by these study findings.

Another proposed amendment to the model was the addition of a 'past behaviour' variable (eg. by Bentler and Speckhart, 1979; Manstead et al, 1983). Considerable support for this amendment was presented in the introduction to the second study (Part III, Chapter 1), and it was originally intended to include it on the study instrument. However, pilot studies showed that very few people reported direct experience of

screening for cardiovascular risk and even fewer of clincial trials. Supplementary questions designed to tap relevant past experience yielded a lot of missing data. In an attempt to overcome this problem and refine the instrument, it was decided to restrict items relating to screening behaviour, to those which would give measures of past experience of blood pressure and cholesterol level tests - two major procedures in CVD screening. Direct questions relating to clinical trial participation were retained.

Although the information obtained from these items was of value to the Health Maintenance Study, with which the research was associated, they were not really adequate as measures of past behaviour re screening. The majority of respondents had had some experience of blood pressure tests, but not of cholesterol tests. Since blood pressure tests are performed for many reasons other than the assessment of cardio-vascular risk, this could not really be taken as evidence of relevant past behaviour - especially as it was not known whether such tests were taken voluntarily or otherwise.

Some respondents did volunteer information that they already been screened for cardiovascular risk, though they were very few in number. Sub-group analyses showed no differences between those who had and had not had experience of either blood pressure or cholesterol tests, in respect of intentions, attitudes or norms. Indeed, results from the preliminary study, and information obtained from in-depth interviews, suggested that whilst few people had had direct experience of screening for cardiovascular risk, many would welcome the opportunity. In the light of this, it would seem that past behaviour is not a major influence on initial positive intention. However, it may well have some bearing on intentions to participate in follow-up screening.

A third addition to the model was an item, loosely influenced by Ajzen's (1985) Theory of Planned Action, which was intended to measure respondents' perceptions of the likelihood of a participatory invitation being issued. It was included to assess whether people's intentions to perform a given behaviour were related to their expectations of the opportunity arising. Results showed no such relationship for either investigated behaviour.

As mentioned at the begining of this section, although the application of the BIM was, overall, effective, some problems were encountered. The major problem related to normative belief measures. This has already been discussed quite extensively in section 2.2 of this chapter. All that will be said further here, is that the problem may have been minimised by interviewer-administration of the questionnaire, or by better explanation

of answering instructions. However, as previously asserted, it would seem to represent an inevitable problem whenever modal sets of referents are used in a heterogenous sample.

At the outset of the research, two main drawbacks of the BIM were projected. These were: (1) a disregard of socio-demographic correlates of intention, or other model components; (2) the possibility of a BIM instrument being too repetitive for effective application in a postal survey of a general population sample.

From the results obtained, it was apparent that the first concern was, to some extent, founded. Findings of age differences in screening intention, and sex differences for clinical trial items, were discussed in sections 3 and 4 of this chapter. The important implications of these findings are that they identified particular groups for targetting considerations. With respect to screening, it was evident that it might be necessary to devise special educational and promotional campaigns directed especially towards younger people. Regarding clinical trials, it was clear that special attention needs to be paid to the effective recruitment of women.

Assessment of the second reservation was rather more difficult. On the one hand, response rates were substantially lower than those achieved in the first study which employed a simpler instrument. However, the instrument was not the only difference between the two studies which might have influenced this result. The personal distribution approach used in the preliminary investigation is associated with higher returns than is mail-shot canvasing (eg. Bellizzi and Hite 1986). Furthermore, the response rate achieved for the postal distribution was no lower than that achieved by many other studies using the same approach (eg. Herberlein and Baumgartner, 1979). Against this, personal approach piloting of the BIM questionnaire, in a site yielding over 60% response rate to the first study, elicited response rates commensurate with the mail shot, rather than the preliminary exercise. Thus it must be considered that the instrument itself had some bearing on the relatively low response.

On the other hand, apart from the problems associated with normative beliefs, returned questionnaires did not suffer major problems of missing data. Also, contrary to the first study, the instrument itself elicited no adverse comments from respondents.

Overall, it would seem that the concern about the utility of the BIM in postal distributions to a general population sample, might have been misplaced. Given its obvious value in the prediction and understanding of investigated behaviours, this is a very reassuring finding.

PART IV

RESEARCH OVERVIEW AND CONCLUSIONS

CHAPTER 1

SUMMARY CONSIDERATIONS, CONCLUSIONS AND RECOMMENDATIONS

In this final chapter, consideration will be given to the combined findings of both studies comprising the research, and the conclusions drawn from the work will be presented. The chapter will end with recommendations.

The principal overall aims of the research included an assessment of public attitudes to GP involvement with preventive medicine, in particular screening and clinical trials for cardiovascular risk-reduction. They also included assessment of participatory intention regarding the two activities; and the identification of factors influencing intentions.

A common secondary aim was to evaluate the alledged superiority of response rates from GP-endorsed canvassing, over those obtained from canvassing not associated with GPs, when anonymity was rigorously applied.

Further secondary aims pertained to individual studies. In the preliminary investigation a very tentative exploration of attitudes towards psychological treatments for hypertension was undertaken. The secondary aim specific to the second study, was an evaluation of the Behavioural Intention Model for use in postal surveys of a general public sample.

Essentially, the preliminary study was designed to explore the area. The main objective was to guage public feeling towards the general concept of GP involvement in preventive screening and research, and to identify the range of variables associated with participation in screening and clinical trials. The primary purpose of the subsequent study was to determine the power of influencing factors.

By and large, the range of variables identified from interview informants and survey respondents of the first study, was reiterated by those of the follow-on project. Certainly principal factors were present on both instruments and the importance of factors tentatively identified as influences in the preliminary study, was confirmed by subsequent results.

1. PARTICIPATION IN SCREENING

The aggregate findings of previous research into screening participation indicate that there is a widespread favourability towards preventive screening which does not seem to be matched by corresponding levels of attendance (eg. O'Brien and Hodes, 1979; Cartwright and Anderson, 1981; King, 1982). Whilst fears of screening procedure and possible test outcome, represent potential deterrents to participation in screening for breast and cervical cancer(Wookey, 1971; French et al.,1982; Maclean et al.,1984); they do not seem to be major barriers to more general screening, or to screening for hypertension (eg.Cartwright and Anderson, 1981; O'Brien and Hodes, 1979). Aggregate findings have also shown social class and age to be quite strong correlates of screening attendance, with the higher socio-economic groups and the young to middle aged being most common participants.

The results of the reported research largely accorded with the accumulated evidence. From preliminary study findings it was apparent that there was very popular support for cardiovascular-risk screening. No widespread deterrents to participation were detected, though there were indications that some women, especially those over 60, might be reluctant to be screened for fear of what diseases might be found; or of having to fully undress for the examination. However, these represented a very small minority of respondents.

Subsequent results confirmed the popularity of screening, and failed to detect any real potential deterrents at all. Indeed, in the second study, where questionnaire items were largely comprised of unprompted beliefs elicited from interview informants, associated outcomes were mainly positive, and neither of the minority deterrents mentioned above, were included. Rather, results indicated a few 'encouragement' factors. These included beliefs that screening participation would: confer peace of mind by getting an 'all clear' verdict; improve one's chances of staying fit and healthy for longer; and lead to information about the best preventive measures to take.

It may be that fears of disease discovery, or of having to undress for medical examination, were peculiar to the preliminary study sample. However, it may be that they do represent genuine barriers to screening participation by older women. After all, in the first study, because of its close association with the Health Maintenance Study (HMS), questionnaire items were determined by a sample comprised entirely of elderly interview informants. In addition, there was a deliberate over-representation of the over 60s in the survey sample. Conversely, in the follow-on study, salient beliefs were elicited from all ages and there

was, in fact, a slight under-representation of older people among survey respondents.

Although cardiovascular screening may be less emotive that breast cancer screening, the preliminary findings did fit well with those presented by French et al.(1982). Their results showed that not only did non-attending women regard the screening clinic as a place of risk, but that they also tended to be in the older age groups. Both fears expressed by older women would suggest that they would regard screening attendance as 'risky'.

Thus it might be concluded that although the data did not support the proposition of these factors as major deterrents to screening, they may well operate as such among older women. Therefore, it might be wise for promotors of cardiovascular screening to bear them in mind when recruiting older women. It would be very easy to make sure that protocols included instructions for recruiters to point out that the procedure does not involve a 'strip' examination. In this way, it might be possible to secure participation from those who might otherwise decline a screening invitation because of this unvoiced concern. It may also be prudent to promote screening as a method of health maintenance, rather than one of disease discovery.

With the exception of these potential minority deterrents, the evidence from the reported research, in conjunction with earlier findings, suggested that there were no real barriers to screening participation. Therefore,it may be tempting to conclude that if cardiovascular-risk screening is offered, it will be generally accepted.

Unfortunately, the behavioural evidence refutes this, and to draw such a conclusion would be to grossly oversimplify the issue and to ignore a very important factor that is frequently touched upon, but which remains under-investigated.

This vital factor is that of social class, which is one of the strongest and most consistent correlates of both ill health and screening attendance. Unfortunately, the under-representation of the lower socio-economic groups at screening clinics, is mirrored by a common under-representation of them in attitude surveys. Certainly, there was a very pronounced bias in favour of the 'middle classes' in the reported research.

Discussions of this factor lead to the suspicion that the 'working class' respondents who did contribute to the survey may not have been very

typical of their class as a whole. This suspicion was aroused by both the lack of numbers, and the fact that initial interview informants from the lower socio-economic groups had been particularly difficult to recruit. This was in stark contrast to the recruitment of 'middle class' informants who volunteered their services much more readily.

If 'working class' respondents *were* atypical of their socio-economic groups, it must be conceded that the lack of class differences found, may not represent the real state of affairs. Rather, it may be that the failure to identify screening deterrent factors is a function of failure to obtain information from the right people. Thus the simple conclusion that there are no deterrent factors which would explain why levels of screening attendance do not match reported attitudes, is a false one.

Indeed, the simple assertion of attitude/behaviour mismatch is somewhat misleading. After all, it would appear that the observed incongruity might be due to overall levels of attendance not corresponding with reported 'middle class' attitudes, rather than with attitudes expressed by all sectors of eligible participants.

Therefore, a more tenable conclusion would be that research to date has found little evidence of any factors which may pose widespread deterrents to screening participation within the higher socio-economic groups. However, it is clear that some deterrent factors must be operating within some sections of the population, though as yet, their indentification has not been achieved. Furthermore, such identification will remain elusive until the problems of securing adequate representation of the lower socio-economic groups in research projects aimed at understanding participatory intention, is resolved.

It has already been noted that 'working class' people are more vulnerable to cardiovascular events, and more likely to have dietary and smoking habits which exacerbate their vulnerability. Clearly, the need to encourage their participation in preventive screening is paramount. Thus, the current research priority must be to identify factors operating within this group to deter their participation in screening. Only in this way can relevant problems be addressed, and appropriate educational and promotional campaigns be devised for special application to this vulnerable target population.

2. PARTICIPATION IN CLINICAL TRIALS

The paucity of previous work in this area prevented much in the way of direct comparison of study results with previous research findings. However, as with screening, major findings from the preliminary study were replicated and amplified by the results of the second. In neither study did the consensus of opinion found for screening apply. Rather there was considerable diversity in attitudes and intentions expressed. Also, whilst 'uncertain' responses were rare for items pertaining to screening, considerable use was made of this option for reported intentions and attitudes regarding clinical trial participation. This option was also utilised quite substantially for some of the important beliefs underlying intention. Thus it was evident that clinical trials represent an area of some controversy, and one about which mixed feelings or confusion obtain.

The major deterrents to trial entry tentatively identified in the preliminary study were worries about: drug side effects, acquired resistance and the discontinuation of current effective medication. Although these potential deterrents applied across the whole spectrum of respondents, concern about side effects particularly, was strongest in women. Subsequent study results confirmed the deterrent potential of these factors, and here too, it was found that side effect worries were more pronounced amongst female respondents.

Other important findings were related to these major deterrents. For example, responses from both studies suggested that people already on medication might be reluctant to become trial entrants. There were probably several reasons for this. Fear of being taken off current drugs might be one reason, worries about adverse drug interactions might be another. In the light of other findings these do not seem unreasonably speculative proposals.

In addition, the second study highlighted the importance of the 'guinea pig' factor, and adequate information, as influences on attitudes, personal norms and participatory intention.

Findings of public desires for information regarding medical treatments were not new. Several other researchers, most notably Philip Ley and his colleagues, have long been providing evidence of this desire, and of public dissatisfaction with the quality of doctor-patient communication experienced. They have also provided ample evidence that poor communications are associated with non-compliance with prescribed regimens.

Interestingly, the majority of respondents in both reported studies indicated that they were quite satisfied with the level of information obtainable from their GPs. In both studies most people reported that they felt they could ask for any information they required; and in the second study, a majority felt that their doctors would provide adequate information about both the trial and pills being tested, as part of an invitation to trial entry. Nevertheless, the strength of beliefs that adequate information would be given, was considerably exceeded by the value placed upon reciept of information.

Whilst this finding about information may not be particularly noteworthy by itself, it assumed great importance in the light of other findings relating to deterrent factors. Results showed that the best discriminator of potential entrants and non-entrants was the 'guinea pig' factor. Previous discussions of this, in chapter 4 of Part III, highlighted its close interaction with other potential deterrents, which could all be regarded as worries that might be associated, not just with trial entry, but also with feelings of being used as a 'guinea pig'.

It was also noted that the 'guinea pig' factor could be largely alleviated; and worries about side effects, acquired resistance and discontinuation of current treaments minimised; by the effective administration of adequate information. Not only would such a recruitment practice help to increase initial consent to entry, but it would also enhance the chances of continued complinace once entry was secured. As work by Ley and by Myers and Calvert (1978) has shown, if initial recruitment information is backed up by suitable written information about the drugs, the prospects for continued compliance would be even brighter. This may be especially so for women, who not only expressed greater concern about side effects and worry about feeling 'off colour' during trial participation; but also were more likely than men to concede the possibility of initial agreement to trial entry, with subsequent non-compliance.

Physicians' fears that obtaining full consent might be an "intrusion into the doctor-patient relationship" and contribute to "decreasingly effective doctor-patient communications" (Taylor and Kelner, 1987), would not seem to be justified. Rather, the evidence from the reported research would indicate the direct opposite - at least from the public's point of view. Information is a highly prized commodity, and one which may have considerable bearing on behaviour. Thus the researcher seeking participation should be generous with it for both ethical and methodological reasons.

In practical terms the message for trial recruiters should be loud and clear. Obtaining informed consent demands that potential trial entrants be given adequate information on which to base their participatory decisions. In particular, it would seem that people require information about the study itself and the possible side effects of trial drugs. It would also be politic to address concerns about acquired resistance and the consequences of trial entry for current medications being taken. In addition, when trial entry is achieved, it would seem to be a good idea to provide entrants with some written back-up information, particularly about possible side effects.

3 SAMPLING SOURCE DIFFERENCES

Sampling source differences were investigated because although there is some evidence to suggest that GP-endorsed surveys elicit greater response rates than those not so blessed; such studies rarely apply respondent anonymity. Thus it was considered possible that the observed superiority of response rates, might be influenced by concern that non-response could be noted by the GP, and perhaps, have some bearing on the subsequent doctor-patient relationship. It was therefore decided to test this supposition by comparing response rates from GP-endorsed canvassing, and non-GP-endorsed canvassing, when anonymity was applied.

In both studies, canvassing of some respondents was associated with their GP, whilst the canvassing of others had no such association. In the first study the GP connection was rather indirect and achieved by distribution of questionnaires in practice waiting rooms. It was not known whether or not patients and GPs discussed the survey in any way. The other sampling sources used in the preliminary study were a shopping centre, a railway station and an Age Concern Drop-In Centre. At all sites, medical and non-medical, distribution was by personal approach and identical canvassing procedures were employed

In the follow-on study, GP-endorsement was greater and more in line with other GP-endorsed surveys. Postal distribution was used, and as well as the usual introductory page, the survey package for 'medical' respondents included a covering note from the GPs, in which the final sentence expressed their belief that the study was important. The non-medical source in this study was the electoral roll.

In both studies, care was taken to stress respondent anonymity to all potential informants.

Although medical sampling elicited a statistically superior response rate in the second study, the magnitude of the difference was small, and not at all apparent in the preliminary investigation. Therefore, GP-endorsement alone, would not seem to account for the high response rates so frequently achieved by medical surveys. However, respondents whose canvassing had been supported by the GPs, did differ from electoral roll respondents in their responses to several key items on the second study instrument. In each case, 'medical' respondents gave more positive answers. These differences could not be attributed to influences by other sociodemographic factors, since the two sample groups did not differ in terms of sex, age or occupational status.

The implications of these findings are serious and demand profound consideration of the costs, as well as the benefits associated with GP-endorsed surveys, especially in instances where true anonymity does not apply. After all, when anonymity was applied, the expected benefits to response rate were minimal, but associated with an unexpected increase in positive responses.

4 ATTITUDES TO PSYCHOLOGICAL TREATMENTS FOR HYPERTENSION

Because of the growing interest and developments in the area of psychological treatments for hypertension, it was decied to make a very tentative initial exploration of public attitudes towards this issue. It must be acknowledged that the data obtained were insufficient on which to base anything but very tentative conclusions. However, the findings were quite dramatic,and were thus worthy of note here, and of continued research in the future.

This area was explored only in the preliminary investigation, but the ovewhelmingly popular support given to the proposal of psychological techniques as adjuncts to pharmaceutical treatments for hypertension cannot be ignored. At present, it seems that public appreciation of the potential of psychological intervention in hypertension management, is considerably greater than that proclaimed by the medical profession. However, given the widespread concern about drugs, indicated by study respondents, it would seem that physicians ought to be considering alternative therapies wherever possible. When they do come round to

including psychological techniques in their routine management of this common disease, study findings suggest that their patients will readily accept the treatment.

5 UTILITY OF THE BEHAVIOURAL INTENTION MODEL

Evidence already abounds for the value of the BIM in the prediction and understanding of behavioural intention. However, it was noted that most published reports of its application have been under conditions of interviwer-administration, or to specialist groups of people, highly motivated to complete the instrument because of its direct relevance to them at that stage. It is not always possible, or desirable to employ interviewer-administered instruments. Neither will it always be the case that the behaviour of interest to researchers is also immediately relevant to all members of their required sample. Therefore, it was decided to test the utility of the BIM as part of a self-completion questionnaire, postally distributed to a general population sample.

The already plentiful evidence for the value of the BIM as a tool for the prediction and understanding of behavioural intention, was increased by the results of the reported research. Furthermore, doubts that its repetitive nature might hamper its utility in postal surveys of a general population sample appeared, overall, to be largely unfounded. It was true that the response rates obtained were substantially lower than those achieved by the preliminary study instrument, but as was discussed in chapter 4 of part III, this may have been as much a function of the distribution approach, as of the instrument per se.

Problems of missing data for normative belief measures were also discussed earlier when it was concluded that this may be an inevitable outcome of using a modal set of referents for a heterogenous sample. However, the main problem with normative belief items came from 'motivation to comply' measures, the value of which had previously been questioned by other researchers.

Although the orthodox BIM proved very useful for predicting and understanding intentions to participate in screening and clinical trials, the inclusion of a personal normative belief item (as suggested by Budd et al, 1984, 1985) considerably enhanced the predictive value. This item was also that most closely associated with intention.

For the behaviours investigated in the reported research, subjective norm played a very minor role. Suggestions that this variable might be dropped from the model were considered, but dismissed. Rather, it was concluded that it should remain as a model component, and perhaps be extended by the addition of a variable designed to assess motivation to comply with the conglomerate 'important others'. This may well prove to be more useful in some instances than separate measures of motivation to comply with individual referents.

One drawback of the BIM was apparent. This was its omission of sociodemographic variables. Whilst it is true that the intentions of women or 'working class' people will be determined by their beliefs rather than their actual gender or occupation; identification of belief differences alone is not enough if results are to have any practical applications. It is not much use to conclude that some people might be put off screening because they are worried about having to undress for examination, if this worry applies to a particular group of people who are not identified. In this particular instance, non-identification of a specific group would not, actually, be of great importance, since all people could be reasured on this point as a routine part of recruitment protocol.

However, it is often the case that the identification of particular groups is important. This is especially so when results indicate the need for particular targetting, and the devising of specific campaigns or protocols appropriate for that group. After all, to be effective, such campaigns need not only to address relevant issues, but to do so in a language that will be understood and accepted by the groups they are aimed at. They also need to be undertaken in places where the target groups are likely to be reached.

Of course, application of the BIM does not preclude collection of demographic data, as was shown in the reported study. However, some acknowledgement of the possible importance of demographic data for the effective utility of BIM study findings would only enhance the model.

6 ITEMISED SYNPOSIS OF CONCLUSIONS

(1) Support for cardiovascular-risk screening was very strong among respondents, for most of whom there seemed to be little evidence of participatory deterrents. However, some older women might be reluctant to attend screening for fears of disease discovery and of having to undress for examination. The behavioural evidence and paucity of information from 'working class' respondents, suggested that deterrents to participation by people of the lower socio-economic groups, probably remain to be identified.

(2) Attitudes and intentions towards clinical trial participation were diverse and indicated considerable uncertainty about the issue. Major potential deterrents identified were: serving as a 'guinea pig'; and worries about: drug side effects, acquired resistance and discontinuance of current effective medications. Very high value was placed upon information, which, if effectively given, could help overcome many deterrent concerns.

(3) Response rates associated with GP-endorsed canvassing were not substantially greater than response rates from other sampling sources. However, in the second study, 'medical' respondents did provide significantly more positive responses than 'non-medical' respondents, for many key items. The use of GP-endorsed canvassing for medical surveys should be undertaken with caution, especially in instances where true anonymity does not apply.

(4) Data pertaining to psychological treatments for hypertension, were insufficient to permit any firm conclusions being drawn. However, they did indicate great public support for the concept of using psychological techniques as adjuncts to drug therapy in the management of hypertension.

(5) The Behavioural Intention Model proved to be a valuable tool for the prediction and understanding of intentions to participate in screening and clinical trials for cariovascular risk-reduction. Overall, it seemed to be quite effective for use in postal distributions to a general public sample. However, there were considerable problems associated with normative belief measures. The suggested reinstatement of a personal normnative belief measure was supported.

7 RECOMMENDATIONS

The major recommendations are as follows:

(1) There is clearly a need for further research into 'working class' attitudes and beliefs relating to participation in screening. Attempts to secure representative samples of lower socio-economic group members may be met with considerable difficulty. However, the need to encourage these groups into screening for cardiovascular-risk is essential if any impact is to be made upon the incidence of cardiovascular events. Current lack of knowledge about the attitudes and beliefs of this sector is a cardinal flaw in the research area, and one which is inhibiting the development of appropriate educational and screening-recruitment campaigns. Therefore, rectification of the problem constitutes a research priority.

(2) Allied to the first recommendation, it was also evident from the study findings that more research in this area should be focused on the younger members of our society if true prevention of cardiovascualar events is to be realised.

(3) Another area of research for which there is clearly an urgent need, is that of the influence of sampling source on responses. From the reported research, it would seem that this is especially required within the field of medicine, though the findings do have wider implications. Concern about identification could not have been the sole influence, or even the major influence, on the positive bias found, since anonymity was strictly applied and considerable efforts were made to stress this fact. Of course, it could be that this result was an artifactual finding, peculiar to the sample obtained. However, since the implications it carries are so important, it would seem necessary to undertake further investigations in this area to confirm, or refute, this finding.

(4) The last recommendation is a practical one which has been offered by previous researchers. It is that doctors should take pains to give adequate information to their patients in terms of both their health status and their treatments. The use of back-up written information about drugs, especially for patients entering clinical trials, is particularly strongly recommended.

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SECTION A

APPENDICES PERTAINING TO THE PRELIMINARY STUDY

(APPENDICES 1 – 9D)

APPENDIX 1

OUTLINE OF THE HMS AND PURPOSE OF INTERVIEWS

A large scale Health Promotion study is to be run by family doctors in General Practices throughout the country. The main purpose of this study is to identify people who are at risk of developing heart attacks or strokes so that steps can be taken to try and prevent these major causes of suffering and early death.

People will be invited by their doctors to have a health check, and they will be given advice on diet, exercise, smoking and drinking etc. People who show signs of being at risk of developing heart trouble or blood pressure will be invited to take part in the testing of certain medicines which doctors believe will hold off heart attacks or strokes. These medicines are not new ones, they are already well established remedies which have been widely used in other ways for many years, and only very low doses medicines will be used.

Like all health care, preventive medicine uses resources, and if Health Service time and money are to be spent in this area it is important that we know how people really feel about this sort of study being run through family practitioners. Some people are very much in favour of projects like these being run by their family doctors, others are very much against them, and yet others hold opinions which fall somewhere in between.

There are no right or wrong opinions about this, only different ones, and we need to find out as much as possible about different people's views of these projects. In order to obtain the information we need, we are interviewing people like you, so that we can find out what your attitudes are towards projects like these. We also hope to find out what sort of things might worry you about taking part, or put you off taking part in them.

All information will be strictly confidential, and no names or addresses are required.

APPENDIX 2

INTERVIEW OUTLINE AND DISCUSSION PROMPTS

(1) Introduction of self and purpose of interview session plus outline of HMS. (stress anonymity & confidentiality, request permission to record, ask if any questions)

(2) General concept of the HMS, and any preventive programmes for the over 60s (is it a good idea, waste of money, is it silly for people in their 70s-)

(3) Lifestyle changes eg. low-fat diet, stop smoking, take more exercise (would it be easy to follow advice like this, would you want to, what problems would you face etc.)

(4) Blood-pressure tests, blood samples (do they worry/frighten you, do you find them uncomfortable, how do you feel when the doctor says he or she wants to do a test like this)

(5) Three-monthly checks (are they too often, is it a problem to get to the surgery, etc.)

(6) Particular attractions and worries (what do you most like about the idea of health promotion studies like this, what do you most dislike, what would encourage you to take part, what would put you off, why would you be put off by this)

(6) Direct diagnostic information (if you were at risk of a heart attack or stroke would you want to know about it/prefer not to know; how would you feel about being told you were at risk, how would you want your doctor to tell you)

(7) Questionnaire (how do you feel about giving lots of personal information on forms, do you think your doctor needs to know about your personal circumstances, what about sensitive issues such as questions about recent bereavements or divorce etc.)

(8) Pills (how do you feel about taking pills, what worries you about taking pills, what about pills that are being tested, how do you feel about taking low-dose pills for a long time-perhaps for several years-do you think you'd keep taking them, what would keep you/stop you taking them)

(9) Placebos (outline clinical trials, ask, how would you feel about not knowing whether you were on a real pill or a sugar pill, do you have any particular worries about this)

(10) Psychological intervention (what do you think causes blood pressure, do you think things like stress and personal problems can affect blood pressure, can relaxation etc. help blood pressure, how would you feel if your doctor advised you to go to a relaxation group to help your blood pressure, what do you think is the best treatment for blood pressure)

APPENDIX 3

EXAMPLES OF IN-DEPTH INTERVIEW STATEMENTS

(1) General concept of the GPHMS and prevention for over 60s-
"It's an excellent idea and very important for older people. We've worked hard all our lives and want to enjoy our retirement, not just die, or worse still become incapacitated." "I think its particularly important to try to prevent things like strokes. In the long run it must be cheaper to prevent these things than pay for the care that stroke victims need." "I'm all for this sort of thing, but then I've got a good doctor, with some they use their patients as guinea pigs, and think more about their research than their patients" "It's a good idea, but some doctors are too busy with patients already to spend time on things like research." "If doctors think they can solve a problem then they must get their patients to help them in their studies. The patients will benefit in the long run."

(2) Lifestyle changes - "I don't drink or smoke but I do like my butter and it would be very hard to give up. I've tried these other things but they're just not the same. I might limit it, but I'd never be able to completely cut it out." "When you're used to having certain kinds of food all your life its very hard to change, but I have taken to the new margarine since my wife died-mainly because it's easier to use."
"I wouldn't want to stop having butter,or stop smoking, but if my doctor told me I ought to I would. Fear is a great motivator"

(3) Blood pressure tests and blood samples- "Blood pressure tests don't worry me,in fact I feel reassured when my doctor says he's going to test my blood pressure" "When you've been in the army like I have, blood samples taken by a family doctor are a treat".

(4) Three-monthly checks- "No problem at all, I live quite close and have nothing else to do with my time." "I usually come up here for a blood pressure test and check on my pills every month, so coming every three months wouldn't bother me, I'd probably be coming up anyway."

(5) Particular attractions and worries- "I like the idea of finding out about problems before it's too late to do anything about them. If you know you're at risk, you wouldn't pass off things you shouldn't pass off, but you'd know they needed seeing to." "Nothing would put me off- I'd be the first to sign up." "I think I would be worried about possible side-effects of pills. You never know if some problem you're having now might be due to pills taken in the past. Sometimes these effects are very long-term." "Some people might worry that they don't know enough about what is going on, though that wouldn't happen in this

practice, here, they all want you to know." "My doctor would always do what's best for me, if he asked me to take part in research I wouldn't hesitate to agree" "The main encouragement to join in a project like this would be the doctor. If you trust him you'd do it, if you didn't you wouldn't. It's as simple as that." "I could ask for any information I want, but I don't think you should question your doctor too much, he'll tell you all you need to know. Anyway, doctors don't like patients who ask too many questions" "To get proper information I'd have to change my doctor. He wouldn't tell me much because he doesn't know much." "I get on well with my doctor and that's important to me. I always see the same one and I wouldn't like it if these check-ups were done by anyone but her."

(6) Direct diagnostic information - "If I were at risk of a heart attack or stroke, I'd want my doctor to tell me straight." " Well, I'd certainly want to know, but I suppose some people might prefer not to know."

(7) Questionnaire- "I don't mind what information my doctor wants, he wouldn't ask for it if it wasn't important." "It's O.K. if you can do it in your own time, in the privacy of your own home, but I wouldn't want to fill in a long form here." "As long as the questionnaire is clearly laid out and easy to understand it would be alright. If you did have problems with it, you could always contact the surgery for help with filling it in, they're really very helpful here." "If you've nothing to hide you've nothing to fear, but it would all be confidential anyway".

(8) Pills- "The length of time you need to take pills doesn't really matter if they're good pills." "There could be a problem with getting hooked on pills if you take them for a long time." "Oh, I hate pills, they rarely work, and you always run the risk of getting cancer from them." "The thing that worries me most is that my doctor might take me off my good pills I'm on now if he wanted me to test some new ones." "Of course, if you take pills for a long time to try to prevent things, they might not work for you when you really need them." "I'm already taking pills for blood pressure, and I certainly wouldn't want to take any more, just to help with some research."

(9) Placebos - "I wouldn't mind not having a medicine pill, but I'd want to know what was in the other one." "What's the point of giving people sugar pills when we know sugar is bad for us."

(10) Psychological intervention- "Everybody knows that stress and personal problems can affect your blood pressure. I know mine goes sky

high when things start going wrong, and you just have to try to relax and take it easy." "When I feel the symptoms of my blood presssure going up again, I just go fishing. It's very relaxing" "Some people might like to join relaxation classes, but I've had my fill of groups now, and I prefer to try to relax by myself. Everyone with blood pressure knows they need to learn to relax, though for some people it's harder than others ,and they might need classes for it."

APPENDIX 4

THE QUESTIONNAIRE

The appended questionnaire is a copy of that used in the main preliminary study. Response frequencies are shown in each answer-option cell, the numbers in brackets indicate the percentage of the entire sample that each value represents. Missing values are also given in both raw score and sample percentage values.

Because analysis code names of variables were sometimes presented in the reults section, these too are marked on the questionnaire.

Applied Psychology Unit
College of Aeronautics
Cranfield Institute of Technology
Cranfield Bedford MK43 0AL England
Telephone Bedford (0234) 750111
Telex 825072 CITECH G

Cranfield

Dear Sir/Madam,

We are conducting a survey into people's opinions about their family doctors and some of the services that they provide.
All information given is strictly confidential, and no names or addresses are required.
It will be greatly appreciated if you will help in this survey by filling in the attached questionnaire and returning it to me in the enclosed freepost envelope.
Please respond as promptly as you can, and remember that you do not need to put a stamp on this envelope when you post the form back.
Thank you for your time and co-operation,
Yours faithfully,

Rachel Asch.

Rachel Asch, BSc. SRN.

DISTRIBUTION SITES

		% of Sample	Response Rate
(1)	Doctors' Surgery (Leighton Buzzard)	91 (20.6)	63%
(2)	" " (Milton Keynes)	62 (14.0)	61%
(3)	Age Concern Drop In Centre	102 (23.1)	66%
(4)	Shopping Centre	85 (19.2)	68%
(5)	Railway Station	102 (23.1)	67%

OFFICE USE ONLY ↓

RNO

WHERE

AGE

SEX

SEGP

LFTSCHL

CONFIDENTIAL

Please answer all questions by writing your answers in the spaces provided and/or by puting ticks in the appropriate boxes. ☑
Please mark only one box for each question.

Personal Details

(1) Age 18-29 = 82 (18.6); 30-39 = 106 (23.9); 40-49 = 57 (13.0); 50-59 = 36 (8.1); 60-69 = 101 (22.8); 70+ = 60 (13.6)

(2) Sex: Male 192 (43.6) Female 248 (56.1) MV = 2 (0.4)

(3) Occupation - if retired state previous normal occupation MV = 25 (5.6%)

SE Group 1 = 31 (7.0); 2 = 89 (20.0); 3 = 140 (31.7); 4 = 44 (9.9); 5 = 14 (3.2); 6 = 99 (22.4)

(4) Age left school.....

Current Health & Health History

(5) How would you rate your general health?

GENHLTH

	Excellent	Good	Fair	Poor
MV=4 (0.9)	80 (18.1)	257 (58.1)	93 (21.0)	8 (1.8)

(6) Compared to other people your age, do you think you are physically fit?

FIT

	Fitter than average	Average	Not as fit as average
MV=4 (0.9)	91 (20.6)	292 (66.1)	55 (12.4)

(7) Have you ever had any heart trouble or blood pressure problems?

HTBP

Yes 108 (24.5) No 334 (75.5) If yes, please specify :

.....

MV = missing values
numbers in brackets = percent of sample

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(8) Are you worried that you might suffer a heart attack or stroke?

	Very worried	Slightly worried	Not really worried
MV=3 (0·7)	13 (3·0)	131 (29·6)	295 (66·7)

WORRY

(9) On average, approximately how often do you visit your family doctor?

	Every 1-2 months	Every 3-6 months	Once a year	Less than once a year
MV=4 (0·9)	65 (14·7)	181 (40·9)	100 (22·6)	92 (20·8)

AVISDR

(10) Are you interested in your general health ?

	Very interested	Fairly interested	Not interested
MV=4 (0·9)	221 (50·0)	205 (46·4)	12 (2·7)

INTRST

(11) Are you careful about your diet, smoking etc, to make sure you keep healthy

	Very careful	Quite careful	Not careful at all
MV=1 (0·2)	83 (18·8)	297 (67·3)	61 (13·8)

CAREFUL

(12) Have you recently - say in the last few years- taken any action to improve your general health, eg by changing

		Yes	No	If Yes please specify
Diet	MV=17 (3·8)	233 (52·7)	192 (43·4)	
Exercise levels	MV=23 (5·2)	148 (33·5)	271 (61·3)	
Smoking Habits	MV=16 (3·6)	65 (14·7)	171 (38·7)	190 (43%) Self-declared non-smokers
Drinking habits	MV=28 (6·3)	65 (14·7)	293 (66·3)	56 (12·7) Self-declared non-drinkers

DIET

EXERC

SMOKE

DRINK

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Please answer the following questions by putting a tick in the appropriate box ☑

For example with the first question, if you get on very well with your family doctor put a tick in the "Very Much So" box; if you do not get on well with him put your tick in the "No" box,etc.
Please answer all questions, and tick only one box for each answer.

There are no right or wrong answers, and it is important that your answers indicate how you really feel about each question.

	Very Much So	Yes	Uncertain	No	Definitely Not	
1) Do you get on well with your family doctor?	131 (29·6)	238 (53·8)	54 (12·2)	11 (2·5)	1 (0·2)	GETON 7 (1·6)
2) Do you usually see the same doctor?	35 (7·9)	307 (69·4)	11 (2·5)	81 (18·3)	1 (0·2)	SAMEDR 7 (1·6)
3) Do you feel you can ask your doctor for any information you want about your health or treatment?	53 (12·0)	316 (71·5)	40 (9·0)	27 (6·1)	2 (0·4)	CANASK 4 (0·9)
4) Do you think that you shouldn't ask your doctor about any treatment he gives you because he will tell you all you need to know?	16 (3·6)	105 (23·7)	34 (7·7)	239 (54·1)	42 (9·5)	WILLTEL 6 (1·4)
5) Do you think doctors dislike patients who ask too many questions?	15 (3·4)	108 (24·4)	96 (21·7)	204 (46·1)	11 (2·5)	TOOMNY4 8 (1·8)
6) If your doctor offered you a check up to find out if you were at risk of developing a heart attack or stroke, would you want to have this check-up?	130 (29·4)	294 (66·5)	11 (2·5)	5 (1·1)	0 —	WANTCU 2 (0·4)
7) If you didn't really want a check up like this, would you find it easy to say no to your doctor?	19 (4·3)	289 (65·4)	32 (7·2)	86 (19·4)	6 (1·3)	EASYNO 10 (2·3)
8) If your doctor advised you to change your diet and cut out fatty foods like butter, would it be easy for you to follow his advice?	39 (8·8)	272 (61·5)	53 (12·0)	65 (14·7)	5 (1·1)	CUTBUT 8 (1·8)
9) If your doctor advised you to give up smoking would you find it very hard to do so?	19 (4·3)	294 (66·5)	33 (7·5)	88 (19·9)	6 (1·3)	HRDNOSMK 2 (0·4)
10) Do you mind having a blood sample taken?	8 (1·8)	23 (5·2)	3 (0·7)	354 (80·0)	48 10·9	BLDSMP 4 (0·9)
11) Do blood pressure tests worry you?	0 —	20 (4·5)	2 (0·4)	356 (80·5)	58 (13·1)	BP 6 (1·4)

MV5

	Very Much So	Yes	Uncertain	No	Definitely Not
12) Do you like the idea of having regular check-ups by your doctor?	82 (18·5)	297 (67·2)	28 (6·3)	26 (5·9)	3 (0·7)
13) If you were at risk of developing a heart attack or stroke would you want your doctor to tell you straight?	136 (30·8)	282 (63·8)	10 (2·3)	8 (1·8)	1 (0·2)
14) If you were at risk of developing a heart attack or stroke, would you rather not know about it?	4 (0·9)	29 (6·6)	19 (4·3)	274 (62·0)	105 (23·7)
15) Would being at risk of heart attack or stroke, motivate you to change your habits if the doctor advised this, even if you found it hard to change?	110 (24·9)	276 (62·4)	16 (3·6)	34 (7·7)	0 —
16) Do you think preventive medicine - eg. regular health checks to help prevent heart attacks and strokes, - is a good use of Health Service time and money?	134 (30·3)	273 (61·8)	13 (2·9)	16 (3·6)	2 (0·5)
17) Do you think that preventive medicine should be offered mainly to middle-age people?	12 (2·7)	91 (20·6)	40 (9·0)	256 (57·9)	39 (8·8)
18) Do you think it's a good idea to offer it to people in their 60s?	59 (13·3)	302 (68·3)	34 (7·7)	38 (8·6)	1 (0·2)
19) Is it silly to offer preventive medicine to people over 70?	6 (1·3)	41 (9·3)	39 (8·8)	297 (67·2)	54 (12·2)
20) Do you think that family doctors are too busy dealing with people who are already ill, to spend their time on preventive medicine and health education?	26 (5·9)	181 (40·9)	75 (17·0)	136 (30·8)	16 (3·6)
21) Do you think family doctors should involve their patients with medical research?	14 (3·2)	169 (38·2)	131 (29·6)	109 (24·7)	10 (2·3)
22) If doctors think certain pills may help in holding off possible heart attacks and strokes, do you think it is a good idea for family doctors to invite their patients to help with the testing of these pills	10 (2·3)	208 (47·0)	114 (25·8)	92 (20·8)	13 (2·9)

OFFICE USE ONLY ↓

MVs

LKEACU 6 (1·4)

STRAIGHT 5 (1·1)

NOTKNW 11 (2·5)

ICARNOT 6 (1·4)

GOODUSE 4 (0·9)

MIDAGE 4 (0·9)

SXTYS 8 (1·8)

SVNTYS 5 (1·1)

TOOBUSY 8 (1·8)

MEDRES 9 (2·0)

TSTPLS 5 (1·1)

OFFICE USE ONLY ↓

		Very Much So	Yes	Uncertain	No	Definitely Not	MVs
23)	Do you think that doctors involved in research, often use their patients as 'guinea pigs'?	12 (2.7)	166 (37.5)	166 (37.5)	89 (20.1)	3 (0.7)	GPIGS 6 (1.4)
24)	Do you think that when family doctors undertake medical research, they may become more concerned with their research than their patients?	11 (2.5)	127 (28.7)	147 (33.2)	142 (32.1)	5 (1.2)	RESPTS 10 (2.3)
25)	Do you think your doctor would always do what's best for you?	55 (12.4)	279 (63.1)	62 (14.1)	34 (7.7)	4 (0.9)	DOBEST 8 (1.8)
26)	Do you dislike giving a lot of personal information on forms?	14 (3.2)	141 (31.9)	22 (5.0)	241 (54.5)	17 (3.8)	NOPINF 7 (1.6)
27)	If you had to fill in a long questionnaire before having a health check, would this put you off having the health check?	4 (0.9)	60 (13.6)	29 (6.6)	291 (65.8)	49 (11.1)	LONGQUES 9 (2.0)
28)	Are you worried about the possible side effects of pills?	54 (12.2)	257 (58.1)	40 (9.0)	82 (18.5)	4 (0.9)	SIDEFFS 5 (1.1)
29)	Do you think that taking pills for a long time could give you cancer?	6 (1.3)	44 (10.0)	212 (48.0)	151 (34.2)	15 (3.4)	CANCER 14 (3.2)
30)	Are you worried that if you take pills for a long time you could get addicted to them?	35 (7.9)	236 (53.4)	53 (12.0)	104 (23.5)	3 (0.7)	ADDICT 11 (2.5)
31)	Do you think that if you take pills for a long time to try to prevent things, they may not work when you really need them?	29 (16.6)	248 (56.1)	82 (18.5)	73 (16.5)	1 (0.2)	NOTWRK 9 (2.0)
32)	Would you mind taking low dose pills every day to keep you healthy?	16 (3.6)	130 (29.4)	57 (12.9)	216 (49.9)	16 (3.6)	LOWPLS 7 (1.6)
33)	If you were already taking pills, eg. for blood pressure, would you object to taking more pills to help with medical research?	16 (3.6)	195 (44.1)	84 (19.0)	130 (29.4)	10 (2.3)	MOREPLS 7 (1.6)
34)	Would you be worried that your doctor might take you off good pills you are already taking, if he wanted you to help in the testing of other medicines?	11 (2.5)	188 (42.5)	87 (19.7)	143 (32.3)	6 (1.4)	OFFGDPLS 7 (1.6)

	Very Much So	Yes	Uncertain	No	Definitely Not
5) If your doctor asked you to test a pill, and you didn't really want to would you find it hard to say no?	3 (0·7)	47 (10·6)	28 (6·3)	288 (65·1)	73 (16·5)
6) If your doctor asked you to take part in pill testing, would you be frightened to refuse in case you upset your doctor?	2 (0·5)	17 (3·8)	19 (4·3)	330 (74·7)	69 (15·6)
7) Do you think stress and personal problems can affect people's blood pressure?	104 (23·5)	308 (69·7)	22 (5·0)	5 (1·1)	0 —
8) Do you think that relaxation can help blood pressure?	70 (15·8)	330 (74·7)	26 (5·9)	10 (2·3)	0 —
9) If people are at risk of developing a heart attack or stroke, do you think that medicines are the only things that can help?	1 (0·2)	33 (7·5)	50 (11·3)	292 (66·1)	62 (14·1)
10) Do you think that people who have blood pressure problems might need help in learning to relax, as well as having pills?	67 (15·1)	337 (76·2)	25 (5·7)	9 (2·0)	0 —
11) Do you think that some people with blood pressure problems could be helped by being taught to cope with stress?	78 (17·6)	330 (74·7)	25 (5·7)	3 (0·7)	1 (0·2)
12) If your doctor invited you to have a health check, would you be pleased to accept?	106 (24·0)	321 (72·6)	9 (2·0)	3 (0·7)	0 —
13) If you were at risk of developing a heart attack or stroke and your doctor invited you to take part in testing medicines which might hold off these possible conditions, would you agree to do so?	33 (7·5)	231 (52·3)	130 (29·4)	43 (9·7)	1 (0·2)

OFFICE USE ONLY

HEADTAB 3 (0·7)

UPSETDR 5 (1·1)

STRESS 3 (0·7)

RELAX 6 (1·4)

ONLYMED 4 (0·9)

RLXPLS 4 (0·9)

COPESTR 5 (1·1)

ACCEPTH 3 (0·7)

ACCEPTC 4 (0·9)

OFFICE USE ONLY

MV5

Would any of the following things put you off booking in for a check up with your doctor?
(Please tick one box for each question as before)

	Very Much so	Yes	Uncertain	No	Definitely Not
Having to fill in a long form first	14 (3·2)	83 (18·9)	12 (2·7)	285 (64·5)	42 (9·5)
Worries that a check up might lead to other medical tests	2 (0·5)	52 (11·8)	18 (4·0)	324 (73·3)	41 (9·3)
Worries about having medical tests	2 (0·5)	44 (9·9)	14 (3·2)	330 (74·7)	42 (9·5)
Worries about having to 'strip off' for a medical examination	11 (2·5)	41 (9·3)	17 (3·8)	320 (72·4)	48 (10·8)
Worries that your doctor might tell you to lose weight or change your diet in some way	3 (0·7)	17 (3·8)	11 (2·5)	359 (81·2)	46 (10·4)
Worries that your doctor might tell you to give up smoking	4 (0·9)	32 (7·2)	9 (2·1)	154 (34·8)	46 (10·4)
Fears of what health problems or diseases might be found	7 (1·6)	58 (13·1)	33 (7·5)	291 (65·8)	48 (10·8)

FILLFRM 6 (1·4)
LEADMTS 5 (1·1)
MEDTST 10 (2·3)
STRIP 5 (1·1)
LOSEWT 6 (1·4)
STPSMK 4 (0·9)
FEARDIS 5 (1·1)

If your local surgery was involved in a health promotion study which offered people the chance to have a check up by their doctor, who would you most like to ask you if you would like to take part in it

please tick just one box

Your own doctor	The practice nurse	The receptionist
356 (80·6)	39 (9·0)	46 (10·4)

WHOASK 1

All things considered, including the best use of Health Service time and money; who do you think would be the best people to do the health checks for preventive medicine projects?

Family doctors	Practice nurses	Health Visitors	Other specially trained people
224 (50·6)	68 (15·5)	17 (3·9)	132 (29·9)

BESTPEOP 1

Finally, please check that you have answered all the questions, and use the space over the page to make any comments you would like to make about preventive medicine health checks, or pill testing that have not been covered here.
Also please give any comments you would like to make about this questionnaire.

Thank you for your time and co-operation in completing this questionnaire.
Remember, there is no need to use a stamp when you post this back in the enclosed FREEPOST envelope.

APPENDIX 5

COPY OF LETTER SENT TO GPs ON CRANFIELD APU HEADED NOTEPAPER

20th June 1986

Dear Dr. ,

Re your telephone conversation with Dr. John Muir on Thursday 19th June, I enclose, for the attention of you and your partners, 5 copies of the questionnaire which I would like to distribute to patients at your practice.

The object of this survey is to try to identify factors which may influence participation in preventive medicine projects and in associated clinical trials . The survey is particularly relevant to the Health Promotion study with which Dr. Muir is involved, but the questionnaire is also designed to yield some more general information about public attitudes towards preventive medicine and clinical trials run by GPs.

The questionnaire was developed from a series of depth interviews and represents factors raised by informants in these interviews. The questions are quite general, and it is not possible to identify individual patients, doctors, or even practices from the questionnaire items.

Should you agree to co-operate with this study, I would like to distribute 100 questionnaires to patients in your practice. Because proper assessment and analysis of response rates requires that certain details be recorded for all people approached, I suggest that I undertake this distribution myself so as not to overburden your reception staff. The questionnaires are to be completed at home and returned to me in Freepost envelopes, so the approaches made to potential respondents are brief and should not cause any disruption of surgery schedules.

I look forward to hearing from you.

Yours Sincerely,

Rachel Asch

APPENDIX 6

STANDARD REQUEST FOR PARTICIPATION

Excuse me, we're doing a survey of people's opinions about family doctors and preventive medicine run in general practice. We don't need your name or your doctor's name, it's just opinions we are after.

It involves filling in a questionnaire, which means basically just ticking boxes, but it does take about 15 minutes to complete, so we're asking people to take it home to do in their own time and return to us in this freepost envelope. Would you be willing to help us?.

Please remember you do not need a stamp for this, just put your finished form back in this envelope, pop it into any post box and it will get back to us on the freepost.

Thank you very much for your time and co-operation.

APPENDIX 7

RESPONSE SHEET

No.	Sex	Age Group	Occupation	Taken	Refused

APPENDIX 8

RATIONALE FOR ANOVAS ON METAVARIABLES

Analysis of variance tests are parametric tests, for which a basic requirement is interval level data. The raw data collected in the study was only of ordinal level, but transformation of the data did render it suitable for anova testing. The transformation involved computation of condescriptive statistics and standardised (Z) scores; and factor scores, for every respondent, on each of the variables comrising the metavariable. Thus the transformed data was, virtually, of interval level, since there was a standard interval between scores. The transformation was performed on selected metavariables, and the procedure employed for each metavariable was as follows:-

(1) From principal components analyses, metavariables were identified (each main component represented one metavariable).

(2)The most highly weighted variables within each component were the constituent variables of the metavariable.

(3) For any given metavariable, Z scores were computed for every respondent, for each of the constituent variables.

(4) The z scores for each variable were then muliplied by the appropriate factor weighting value, thus giving a factor score for each variable.

(5) The sum of the factor scores for all consituent variables of a metavariable, represented the metavariable score.

(6) The metavariable score for each respondent was then used in the anova test.

An example of the type of computer commands used to transform the data, may clarify the procedure, and one will be presented below.

Example
Principal component 1 - constituent variables= Leadmts, medtsts, strip, fearprob. The factor weights were: Leadmts .855, medtsts .893, strip .612, fearprob .792.
Command 1 - Condescriptives on above variables
Command 2 - save Z scores
Command 3 - compute metavariable score (.855 x Zscore of Leadmts) + (.893 x Z score of medtsts) + (.612 x Z score of strip) + (.792 x Z score of fearprob)
The metavariable score is computed thus, for each respondent, and it is these scores which are then used in Anova tests.

APPENDIX 9A

Details of Crosstabs in Table 22, p80

OBSERVED / EXPECTED / ROW % / COL % / TOT %

WILLTEL	SAGE 1	2	3	4	ROW TOT %
1	21	21	37	41	
	30,1	22,1	46,3	21,5	27,6
	17,5	17,5	30,8	34,2	
	19,3	26,3	22	52,6	
	4,8	4,8	8,5	9,4	
2	12	7	8	7	
	8,5	6,3	13,1	6,1	7,8
	35,3	20,6	23,5	20,6	
	11	8,8	4,8	9	
	2,8	1,6	1,8	1,6	
3	76	52	123	30	
	70,4	51,7	108,5	50,4	64,6
	27	18,5	43,8	10,7	
	69,7	65	73,2	38,5	
	17,5	12	28,3	6,9	
Col Tot	25,1	18,4	38,6	17,9	

OBSERVED / EXPECTED / ROW % / COL % / TOT %

MEDRES	SAGE 1	2	3	4	ROW TOT %
1	49	33	75	26	
	46,7	34	69,6	32,7	42,5
	26,8	18	41	14,2	
	44,5	41,3	45,7	33,8	
	11,4	7,7	17,4	6	
2	40	20	53	18	
	33,4	24,3	49,8	23,4	30,4
	30,5	15,3	40,5	13,7	
	36,4	25	32,3	23,4	
	9,3	4,6	12,3	4,2	
3	21	27	36	33	
	29,9	21,7	44,5	20,9	27,1
	17,9	23,1	30,8	28,2	
	19,1	33,8	22	42,9	
	4,9	6,3	8,4	7,7	
Col Tot	25,5	18,6	38,1	17,9	

OBSERVED / EXPECTED / ROW % / COL % / TOT %

CUTBUT	SAGE 1	2	3	4	ROW TOT, %
1	62	54	133	61	
	79,5	56,6	120,3	53,7	71,6
	20	17,4	42,9	19,7	
	55,9	68,4	79,2	81,3	
	14,3	12,5	30,7	14,1	
2	19	11	22	1	
	13,6	9,7	20,6	9,2	12,2
	35,8	20,8	41,5	1,9	
	17,1	13,9	13,1	1,3	
	4,4	2,5	5,1	,2	
3	30	14	13	13	
	17,9	12,8	27,2	12,1	16,2
	42,9	20	18,6	18,6	
	27	17,7	7,7	17,3	
	6,9	3,2	3	3	
COL TOT	25,6	18,2	38,8	17,3	

OBSERVED / EXPECTED / ROW % / COL % / TOT %

DOBEST	SAGE 1	2	3	4	ROW TOT %
1	71	65	125	71	
	84,5	59,9	127,6	59,9	76,9
	21,4	19,6	37,7	21,4	
	64,5	83,3	75,3	91	
	16,4	15	28,9	16,4	
2	26	9	21	6	
	15,8	11,2	23,8	11,2	14,4
	41,9	14,5	33,9	9,7	
	23,6	11,5	12,7	7,7	
	6	2,1	4,9	1,4	
3	13	4	20	1	
	9,7	6,9	14,6	6,9	8,8
	34,2	10,5	52,6	2,6	
	11,8	5,1	12	1,3	
	3	,9	4,6	,2	
COL TOT	25,5	18,1	38,4	18,1	

OBSERVED
EXPECTED
ROW %
COL %
TOT %

SAGE

SIDEFFS	1	2	3	4	ROW TOT, %
1	70 78,8 22,7 63,1 16,1	44 55,4 14,2 56,4 10,1	140 119,3 45,3 83,3 32,2	55 55,4 17,8 70,5 12,6	71
2	17 10,2 42,5 15,3 3,9	6 7,2 15 7,7 1,4	10 15,4 25 6 2,3	7 7,2 17,5 9 1,6	9,2
3	24 21,9 27,9 21,6 5,5	28 15,4 32,6 35,9 6,4	18 33,2 20,9 10,7 4,1	16 15,4 18,6 20,5 3,7	
COL %	25,5	17,9	38,6	17,9	

OBSERVED
EXPECTED
ROW %
COL %
TOT %

SAGE

OFFGDPLS	1	2	3	4	ROW TOT %
1	40 50,5 20,3 36 9,2	48 35,5 24,4 61,5 11,1	67 76 34 40,1 15,5	42 35 21,3 54,5 9,7	45,5
2	30 22,3 34,5 27 6,9	9 15,7 10,3 11,5 2,1	40 33,6 46 24 9,2	8 15,5 9,2 10,4 1,8	20,1
3	41 38,2 27,5 36,9 9,5	21 26,8 14,1 26,9 4,8	60 57,5 40,3 35,9 13,9	27 26,5 18,1 35,1 6,2	34,4
COL %	25,6	18	38,6	17,8	

OBSERVED
EXPECTED
ROW %
COL %
TOT %

SAGE

MEDTSTS	1	2	3	4	ROW TOT, %
1	4 11,6 8,9 3,6 ,9	4 8,1 8,9 5,2 ,9	19 17,4 42,2 11,4 4,4	18 8 40 23,7 4,2	10,5
2	0 3,6 0 0 0	2 2,5 14,3 2,6 ,5	7 5,4 50 4,2 1,6	5 2,5 35,7 6,6 1,2	3,3
3	107 95,8 28,8 96,4 24,9	71 66,4 19,1 92,2 16,5	140 143,2 37,7 84,3 32,6	53 65,6 14,3 69,7 12,3	86,3
	25,8	17,9	38,6	17,7	

OBSERVED
EXPECTED
ROW %
COL %
TOT %

SAGE

FEARPROB	1	2	3	4	ROW TOT %
1	8 16,1 12,7 7,2 1,8	5 11,3 7,9 6,4 1,1	27 24,3 42,9 16,1 6,2	23 11,3 36,5 29,5 5,3	14,5
2	9 8,4 27,3 8,1 2,1	4 5,9 12,1 5,1 ,9	14 12,7 42,4 8,3 3,2	6 5,9 18,2 7,7 1,4	7,6
3	94 86,5 27,7 84,7 21,6	69 60,8 20,4 88,5 15,9	127 130,9 37,5 75,6 29,2	49 60,8 14,5 62,8 11,3	77,9
	25,5	17,9	38,6	17,9	

APPENDIX 9B

Details of Crosstabs in Table 23, p81

OBSERVED / EXPECTED / ROW % / COL % / TOT %	HTBP 1	HTBP 2	ROW TOT. %
CUTBUT 1	76	234	
	75,9	234,1	71,6
	24,5	75,5	
	71,7	71,6	
	17,6	54	
2	7	46	
	13	40	12,2
	13,2	86,8	
	6,6	14,1	
	1,6	10,6	
3	23	47	
	17,1	52,9	16,2
	32,9	67,1	
	21,7	14,4	
	5,3	10,9	
	24,5	75,5	

OBSERVED / EXPECTED / ROW % / COL % / TOT %	HTBP 1	HTBP 2	ROW TOT %
TESTPLS 1	67	150	
	52,4	164,6	49,9
	30,9	69,1	
	63,8	45,5	
	15,4	34,5	
2	21	93	
	27,5	86,5	26,2
	18,4	81,6	
	20	28,2	
	4,8	21,4	
3	17	87	
	25,1	78,9	23,9
	16,3	83,7	
	16,2	26,4	
	3,9	20	
	24,1	25,9	

OBSERVED / EXPECTED / ROW % / COL % / TOT %	HTBP 1	HTBP 2	ROW TOT. %
LOWPLS 1	26	119	
	34,2	110,8	33,5
	17,9	82,1	
	25,5	36	
	6	27,5	
2	2	55	
	13,4	43,6	13,2
	3,5	96,5	
	2	16,6	
	,5	12,7	
3	74	157	
	54,4	176,6	53,3
	32	68	
	72,5	47,4	
	17,1	36,3	
	23,6	76,4	

OBSERVED / EXPECTED / ROW % / COL % / TOT %	HTBP 1	HTBP 2	ROW TOT %
OFFGDPLS 1	53	144	
	46,9	150,1	45,5
	26,9	73,1	
	51,5	43,6	
	12,2	33,3	
2	10	77	
	20,7	66,3	21
	11,5	88,5	
	9,7	23,3	
	2,3	17,8	
3	40	109	
	35,4	113,6	34,4
	26,8	73,2	
	38,8	33	
	9,2	25,2	
	23,8	76,2	

APPENDIX 9C

Details of Crosstabs Table 24, p81

OBSERVED / EXPECTED / ROW % / COL % / TOT %	ACCPTCT 1	2	3	ROW TOT. %
TESTPLS	175	34	9	
1	131,9	64,4	21,6	50,3
	80,3	15,6	4,1	
	66,8	26,6	20,9	
	40,4	7,9	2,1	
2	50	60	4	
	69	33,7	11,3	26,3
	43,9	52,6	3,5	
	19,1	46,9	9,3	
	11,5	13,9	,9	
3	37	34	30	
	61,1	29,9	10	23,3
	36,6	33,7	29,7	
	14,1	26,6	69,8	
	8,5	7,9	6,9	
Col%	60,5	29,6	9,9	

OBSERVED / EXPECTED / ROW % / COL % / TOT %	ACCPTCT 1	2	3	ROW TOT %
MOREPLS	98	78	33	
1	125,8	62,4	20,8	48,4
	46,9	37,3	15,8	
	37,8	60,5	76,7	
	22,7	18,1	7,6	
2	42	40	2	
	50,6	25,1	8,4	19,4
	50	47,6	2,4	
	16,2	31	4,7	
	9,7	9,3	,5	
3	120	11	8	
	83,7	41,5	13,8	32,2
	86,3	7,9	5,8	
	46,2	8,5	18,6	
	27,8	2,5	1,9	
Col%	60,2	29,9	10	

OBSERVED / EXPECTED / ROW % / COL % / TOT %	ACCPTCT 1	2	3	ROW TOT %
OFFGDPLS	105	61	30	
1	117,3	59,1	19,6	45,5
	53,6	31,1	15,3	
	40,7	46,9	69,8	
	24,4	14,2	7	
2	44	40	3	
	52,1	26,2	8,7	20,2
	50,6	46	3,4	
	17,1	30,8	7	
	10,2	9,3	,7	
3	109	29	10	
	88,6	44,6	14,8	34,3
	73,6	19,6	6,8	
	42,2	22,3	23,3	
	25,3	6,7	2,3	
	59,9	30,2	10	

APPENDIX 9D

Details of Crosstabs Table 25, p82 1= Drs, L,B, 2=Drs, M,K, 3=Age Concern 4=Shopping Centre 5=Station

OBSERVED
EXPECTED WHERE
ROW %
COL %
TOT %

MEDRES	1	2	3	4	5	ROW TOT %
1	43	26	38	33	43	
	38,5	25,4	41,8	35,5	41,8	42,3
	23,5	14,2	20,8	18	23,5	
	47,3	43,3	38,4	39,3	43,4	
	9,9	6	8,8	7,6	9,9	
2	27	18	21	26	39	
	27,5	18,2	30	25,4	30	30,3
	20,6	13,7	16	19,8	29,8	
	29,7	30	21,2	31	39,4	
	6,2	4,2	4,8	6	9	
3	21	16	40	25	17	
	25	16,5	27,2	23,1	27,2	27,5
	17,6	13,4	33,6	21	14,3	
	23,1	26,7	40,4	29,8	17,2	
	4,8	3,7	9,2	5,8	3,9	
Col%	21	13,9	22,9	19,4	22,9	

OBSERVED
EXPECTED WHERE
ROW %
COL %
TOT %

DOBEST	1	2	3	4	5	ROW TOT %
1	78	40	88	61	67	
	70	46,9	76,2	63,1	77,7	77
	23,4	12	26,3	18,3	20,1	
	85,7	65,6	88,9	74,4	66,3	
	18	9,2	20,3	14,1	15,4	
2	10	13	8	12	19	
	13	8,7	14,1	11,7	14,4	14,3
	16,1	21	12,9	19,4	30,6	
	11	21,3	8,1	14,6	18,8	
	2,3	3	1,8	2,8	4,4	
3	3	8	3	9	15	
	8	5,3	8,7	7,2	8,8	8,8
	7,9	21,1	7,9	23,7	39,5	
	3,3	13,1	3	11	14,9	
	,7	1,8	,7	2,1	3,5	
	21	14,1	22,8	18,9	23,3	

OBSERVED EXPECTED ROW % COL % TOT %	WHERE 1	2	3	4	5	ROW TOT %
OFFGDPLS	45	23	51	45	35	
1	41,6	28,4	44,8	38	46,2	45,7
	22,6	11,6	25,6	22,6	17,6	
	49,5	37,1	52	54,2	34,7	
	10,3	5,3	11,7	10,3	8	
2	12	20	15	16	24	
	18,2	12,4	19,6	16,6	20,2	20
	13,8	23	17,2	18,4	27,6	
	13,2	32,3	15,3	19,3	23,8	
	2,8	4,6	3,4	3,7	5,5	
3	34	19	32	22	42	
	31,2	21,2	33,6	28,4	34,6	34,3
	22,8	12,8	21,5	14,8	28,2	
	37,4	30,6	32,7	26,5	41,6	
	7,8	4,4	7,4	5,1	9,7	
	20,9	14,3	22,5	19,1	23,2	

SECTION B

APPENDICES PERTAINING TO THE SECOND STUDY

(APPENDICES 10 - 21)

APPENDIX 10

SELECTION OF POTENTIAL INTERVIEW RESPONDENTS

Selection of potential respondents was performed by the author with the help of practice managers and receptionists. At one practice, the age/sex register was kept in a card-index system, whilst at the other practice the age/sex register was computerised. Thus the procedure used for informant selection was slightly different for the two practices and will be described separately.

In both cases the objective was to obtain a random selection of patients within an age/sex/'class' quota system. There was to be numbers in each of the 12 categories shown below.

SAMPLING CATEGORIES

SOCIO-ECONOMIC GROUPINGS	SEX	
	MALE	FEMALE
Group A 'middle class'	25-44 years	25-44 years
	45-64 years	45-59 years
	65-75 years	60-75 years
Group B 'working class'	25-44 years	25-44 years
	45-64 years	45-59 years
	65-75 years	60-75 years

Selection From Card-Index System

The card-index age/sex register system was comprised of a set of cards each bearing the name, address and date of birth of a patient currently registered with the practice. The name of the individual doctor with whom the patient was registered was also recorded on these cards. The cards were filed in small cabinets segregated by sex. For each sex, cards were grouped by year of birth and each new birth year was preceded by a card on which the number of registered patients born that year was recorded. Within each birth year cards were arranged in alphabetical order.

Male and female potential informants were selected separately by identical procedures which are detailed below.

Firstly, birth years to be sampled for each age group were determined by the use of random number tables. For example, in the first age group, 25-44, appropriate birth years were those between 1943 and 1962. Therefore the required number of years was selected from digits 43 and 62. Use of random number tables meant that sometimes more than one patient was selected from a particular year.

Secondly, when the sampling years had been determined the receptionist looked up the appropriate record cards and read aloud the number of patients with that birth year who were currently registered. Again using random number tables, the author then selected a respondent from that year. For example, if the birth year was 47 and there were 248 women with that birth year registered; the first number in the tables between 1 and 248 was chosen, (say number 036) and the woman whose card corresponded to that number was selected as a potential informant.

To avoid unnecessary intrusion into the privacy of practice registers, the searching through cards for the appropriate number was performed by the receptionist, so that the author was given names only of selected persons and did not have access to the names of anyone else registered at that practice.

Thirdly, the year of birth, name and address were recorded together with the name of the doctor with whom the potential informant was registered. The receptionist was then asked to estimate from the address, or her knowledge of the patient, whether that person was most likely to be in the top or bottom three socio-economic groups, and a mark was made in the appropropriate cell of the sampling categories matrix.

This procedure was repeated until one of the socio-economic group cells had x names in it, and was about to be over-represented by the addition of another person estimated to fall within it. When this occured, the receptionist was asked to go backwards or forwards one card at a time, until a person estimated to be in the corresponding unfilled cell was located. This method was continued until both socio-economic cells for the given age range and sex were filled.
The same procedure was followed for all age groups and both sexes.

Selection From Computerised Registers

An abridged printout of the age/sex register was provided by the practice manager who assisted in the selection of potential respondents. The printout gave very little detail of the patients. All that it provided was a series of names listed according to sex and 10-year age bands ie: 25-34, 35-44, 45-54, 55-64,and 65-75. All registered patients of one sex, with birth years within a given decade were listed alphabetically.

Using these lists, potential respondents were selected as follows:-

Firstly, the practice manager told the author the number of people on a given register, and the author, using random number tables, determined the selection of a potential respondent. Eg. if there were 365 females between 25-34, and the first random number chosen was 147, the 147th name on the list was the first one selected. This procedure was continued, using all appropriate lists, until the requisite number for each sex/age cell was obtained.

The age ranges of interest to the study, generally spanned two print-out age groups. So, to obtain the necessary numbers for each study age-group, half the required number of potential informants were selected from each of the two corresponding register lists.

Because the middle age range for women was 45-60, and the practice lists grouped women from 45-54 and 55-64, some women selected from the practice lists were too old for inclusion in this cell. When this happened, the selected women were allocated to the older age group and the selection of woman for the middle age group continued.

Because these registers did not include addresses, it was not possible at this stage to estimate socio-economic status of potential informants, unless the practice manager had personal knowledge of selected people. Therefore, attention was paid only to ensuring equal numbers from each sex and age group. It was hoped that with random sampling from a large register, adequate representation of both required socio-economic groupings would be achieved. Fortunately, when selection of potential respondents was completed and practice staff obtained addresses direct from the computer, it did appear that there was a fairly even spread of estimated socio-economic groupings.

APPENDIX 11

COPY OF FIRST INTERVIEW-CANVASSING LETTER
(Written on HMS Headed Paper)

date

Dear (Name),

We are conducting research into people's attitudes towards health checks and the testing of medicines.
The type of health checks we are concerned with are those which are carried out to identify people at increased risk of disorders like heart attacks or strokes, so that steps can be taken to try to prevent these conditions occuring. We would also like to find out just how people feel about taking part in the testing of medicines, and we are currently developing a questionnaire to be used in a nationwide investigation of such attitudes.

In order to get this questionnaire right, we need to discover the important things, both good and bad, that people associate with having a health check, and with taking part in the testing of medicines.
To this end, we are conducting interviews with people who are willing to discuss their feelings about these things, so that we can obtain the information we require for the development of our questionnaire.

The interview lasts for about half an hour. Each one is private, and the only people present will be myself and the person being interviewed. No names or addresses are recorded in the interviews, and as well as being anonymous all information obtained will be treated in strict confidence.

Your name was selected at random from the list of patients registered with your doctor. Of course, your doctor knows we are using this list, but he has no personal involvement in our study. He will not even know whether or not you agree to take part, and he will certainly not be told anything you say.

You are, of course, under no obligation to take part in these interviews, but if you are willing to help in this matter please complete the attached form and return it to me in the envelope provided.
If you decide not to take part, simply take no action, and we will not contact you again.

Thank you very much for your time.
Yours Sincerely,

Mrs. Rachel Asch

To Rachel Asch

I am interested in taking part in the interviews outlined above, and I consent to you contacting me again to arrange a convenient interview appointment.

Name_____

Address _____

_____

_____

Telephone No. _____

APPENDIX 11A

COPY OF AMENDED INTERVIEW-CANVASSING LETTER

date

Dear (Name),

We are conducting research into people's attitudes towards health checks and the testing of medicines.
We are ***not*** *asking you to have a health check,* ***nor*** *to test any medicines. What we are asking for are attitudes and opinions to help us discover the important things, both good and bad, that people associate with these activities. To get our information right, we are interviewing people who are willing to discuss their feelings about these matters.*

We interview people in their own homes, and each interview lasts for about half an hour. No names or addresses are recorded in the interviews, and as well as being anonymous all information obtained will be treated in strict confidence.

Your name was selected at random from the list of patients registered with your doctor. Of course, your doctor knows we are using this list, but he has no personal involvement in our study. He will not even know whether or not you agree to take part, and he will certainly not be told anything you say.

You are, of course, under no obligation to take part in these interviews, but if you are willing to help in this matter please complete the attached form and return it to me in the envelope provided. If you decide not to take part, simply take no action, and we will not contact you again.

Thank you very much for your time.
Yours Sincerely,

Mrs. Rachel Asch

To Rachel Asch

I am interested in taking part in the interviews outlined above, and I consent to you contacting me again to arrange a convenient interview appointment.

Name_____

Address _____

_____

_____

Telephone No._____

APPENDIX 11B

COPY OF GP-COVERING NOTE TO THE CANVASSING LETTERS

ON PRACTICE HEADED NOTEPAPER

date

Dear (Name),

The enclosed letter is from Mrs. Rachel Asch who is a researcher investigating attitudes towards health checks and the testing of medicines. She is working with a team of doctors at Oxford University studying ways of reducing the number of heart attacks and strokes people suffer.

In order to conduct her research properly, she needs to interview a wide range of people so that all sections of the population are represented.

We agreed to let her see our list of registered patients so that she could select from it a random sample of names to approach with a request for interview. Apart from this, we have nothing to do with her research.

Mrs. Asch has not seen your medical notes, nor will she ever do so. All she knows about you is your name, address, and age group.

If you decide that you would like to take part in the interviews, you must contact her to arrange an appointment. If you do not return the form consenting to further contact, nothing more will happen.

Whatever your decision, it will be known only to you and Mrs. Asch, but we believe this is an important project and hope you will feel able to help.

Yours Sincerely

(Dr's. Name)

APPENDIX 12

INTERVIEW SCHEDULE

I would like to ask your opinions about two main issues. Firstly I'd like to talk about health checks - in particular those intended to find out whether people are at risk of a heart attack or stroke. The second issue is that of clinical trials - medical studies in which people take part in the testing of medicines.

We are really interested in two types of medicine-testing studies.
The first type is the testing of new medicines, to find out about their treatment effects and their side effects. The second type is the testing of medicines already in use as remedies for some problems, to discover if they are also of value in the treatment or prevention of other problems.

The questions are not intended to test your knowledge; but to help us find out what people really feel about these things.

There are 3 seperate sets of question, and at the begining of each I will give you an outline of the particular aspect we would like to explore.
The questions all follow the same basic pattern and you will be asked to list the advantages, disadvantages and anything else you associate with topic in question. I will also ask you to tell me any groups or individuals who may also be relevant to your considerations of that topic.

Please remember that there are no right or wrong answers to any of the questions, it is only your personal opinions that are important to us.

We do not keep notes of any names or addresses in these interviews, so everything you say is anonymous. The gist of what you say will help us to develop an appropriate questionnaire, but no one will ever know exactly what you have said.

Although we do not use any names or addressess, we would appreciate it if you would answer a few questions about yourself to give us some idea of what you are like in terms of age, sex, family and occupational background.

Age: _____

Sex: Male ☐ Female ☐

Marital Status:

Married/ Cohabiting ☐ Divorced/ Separated ☐ Widowed ☐ Single ☐

Children - if you have children please mark how many in each age group:

0-4 ☐ 5-18 ☐ over 18 ☐

Education and Employment:

At what age did your full-time education end (including college, university etc.)?_____

Do you have any professional or trade qualifications?
If so, please specify

_____

_____

Are you currently:

employed full time ☐ employed part time ☐ self employed ☐ unemployed ☐

'at home'parent or carer ☐ housewife ☐ student ☐ disabled ☐ retired ☐

other (please specify)_____

If currently working, what is your job title?

_____

If you are unemployed or retired, what is (or was) your usual occupation?

_____

If you are married/cohabiting and do not have paid employment, what is (or, for retired people, was) the occupation of your partner(the head of the household)

_____

The first topic I would like to explore concerns health checks to find out whether or not people are at risk of developing a heart attack or stroke. Many of the people at special risk of these disorders can be identified from fairly simple health checks done by family doctors (GPs) or their nurses. Once identified steps can be taken to reduce the risk.

These checks involve questions about your own health and the health history of your family; and about your diet, smoking, drinking habits etc. Usually, all else that is required is for you to give a blood sample and have your blood pressure taken.

*I would like to know what **you** think about having a check-up like this, say within the next 3 to 6 months.*

I am not offering you the chance to have a check-up, I just want to know what you think about it.

*(1) What do you see as the **advantages** of **your** having a check up like this to find out if you are at increased risk of developing a heart attack or stroke.*

*(2) What do you see as the **disadvantages** of **your** having this kind of check up?*

(3) Is there anything else that comes to mind when you think about having a check up to find out if you are at risk of developing a heart attack or stroke?

I would now like to know what you think other people may feel about your having a check up to find out if you are at risk of developing a heart attack or stroke. Again, think of you having this check within the next 3 to 6 months.

(4) Are there any groups or individuals, who you think would ***approve*** *of* ***your*** *having a check up to find out if you are at risk of developing a heart attack or stroke?*

(5) Are there any groups or individuals who you think would ***disapprove*** *of your having a check up to find out if you are at risk of developing a heart attack or stroke?*

(6) Are there any other groups or individuals who come to mind when you think about having a check up to find out if ***you*** *are at risk of developing a heart attack or stroke?*

I would now like to ask you what you consider to be the main causes of heart attacks and strokes; and what things might put people at risk of developing them.

In this section, I would like to ask you what you feel about taking part in the testing of new medicines.

When new medicines are developed they must undergo strict scientific testing before they can be considered for general use. Most of this testing takes place in the laboratory, but in the end, medicines that are intended for use in humans, must be tested on humans.

As before, I am not asking you to **actually** test any medicines, I would just like to know how **you** feel about doing this.

(7) What do you see as the **advantages** of **your** taking part in the testing of new medicines?

(8) What do you see as the **disadvantages** of **your** taking part in the testing of new medicines?

(9) Is there anything else that comes to mind when you think about **your** taking part in the testing of new medicines?

I would now like to know what you think other people may feel about your taking part in the testing of new medicines.

(10) Are there any groups or individuals who you think would **approve** of **your** taking part in the testing of new medicines?

(11) Are there any groups or individuals who you think would **disapprove** of **your** taking part in the testing of new medicines?

(12) Are there any other groups or individuals who come to mind when you think about **your** taking part in the testing of new medicines?

*I*n this section I am still interested in your opinions about taking part in the testing of medicines, but this time we are concerned with the testing of medicines for conditions **you** may be at special risk of developing.

The medicines I'm talking about here are not new ones, but medicines already in use as treatments for other things. For example, there is now considerable evidence to suggest that low daily dosages of aspirin may help to hold off heart attacks and strokes in some people who are at increased risk from them.

However, we don't yet know if it will be of benefit to all who show signs of increased risk, and there is only one way to find out for sure whether or not a particular medicine will be of use in holding off a particular disorder. That way is for doctors to test the medicine on people who are at special risk of developing the disorder in question.

I would like to know what you think about taking part in the testing of medicines to determine their value in the prevention of a disorder that **you** were at increased risk of developing. Yet again, it is only your thoughts I am asking for.

(13) What do you see as the **advantages** of **your** taking part in the testing of medicines to discover whether or not they may help to hold off a condition you were at increased risk of developing?

(14) What do you see as the **disadvantages** of **your** taking part in the testing of medicines to discover whether or not they may help to hold off a condition you were at increased risk of developing?

(15) Is there anything else that comes to mind when you think about **your** taking part in the testing of medicines, to discover whether or not they may help to hold off a condition you were at increased risk of developing?

I would now like to know what you think other people may feel about your taking part in the testing of medicines, to determine whether or not they may help hold off a condition you were at risk of developing.

(16) Are there any groups or individuals who you think would **approve** of **your** taking part in the testing of known medicines, to discover whether or not they may help to hold off a condition you were at increased risk of developing?

(17) Are there any groups or individuals who you think would **disapprove** of **your** taking part in the testing of known medicines, to discover whether or not they may help to hold off a condition you were at increased risk of developing?

(18) Are there any other groups or individuals who come to mind when you think about **your** taking part in the testing of known medicines, to discover whether or not they may help to hold off a condition you were at increased risk of developing?

I would now like to ask a couple of questions about pill-taking generally.

Firstly, if your doctor prescribes pills for you, what, if anything, would encourage you to remember to take the pills as directed?

What, if anything, would prevent you from taking the pills as directed by your doctor?

Finally, we would like a little information about your current health and past experiences, if any, of health checks and the testing of medicines.

How would you rate your general health?

Excellent	Good	Fair	Poor

How interested are you in your general health?

Very interested	Quite interested	Not really interested

How careful are you about your diet,exercise etc. to make sure you keep healthy?

Very Careful	Quite Careful	Not Careful at all

Are you, or have you ever been, a smoker?

Current Smoker	Ex Smoker	Never Smoked

Have you ever suffered any heart trouble or blood pressure problems?

Yes ☐ No ☐ If 'yes' please specify:
.....

Have you ever had a health check involving blood pressure tests and blood samples?

Yes ☐ No ☐

Have you ever had any other screening checks, eg smear tests for cervical cancer, X-Ray tests for TB etc?

Yes ☐ No ☐ If 'yes' please specify:
.....

Have you ever taken part in the testing of any medicines?

Yes ☐ No ☐

APPENDIX 13

SUMMARY OF BELIEFS ELICITED FROM INTERVIEWS

Key to Figures:
Digits symbolise age group:-
1 = 25-44; 2 = 44-59(♀) 44-64 (♂); 3 = 60-75(♀) 65-75(♂)

The first letter symbolises sex:- f = female; m = male

Second letters symbolise socio-economic group:-
a = 'middle class'; b = 'working class'

Thus: 1fa = young(25-44) woman, 'middle class'
1fb = " " " 'working class' etc.

The denominator represents total number of informants in each group, numerators show how many of each group gave the response.

SCREENING

1) Knowledge of risk an advantage

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
3/3	2/3	3/3	1/3	2/3	1/3	3/3	3/3	1/3	3/3	3/3	2/3	Tot:27/36

2) Can take preventive measures

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	3/3	3/3	1/3	2/3	1/3	3/3	2/3	2/3	2/3	2/3	2/3	Tot:25/36

3) Would be told the best preventive measures to take

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	2/3	1/3	1/3	1/3	2/3	1/3	2/3	2/3	2/3	1/3	2/3	Tot:19/36

4) Could find out something you don't want to know

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	3/3	1/3	2/3	2/3	1/3	-/3	2/3	-/3	-/3	-/3	Tot:13/36

5) Could cause worry which in turn could exacerbate heart trouble

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	1/3	-/3	-/3	1/3	-/3	1/3	-/3	1/3	-/3	-/3	1/3	Tot:7/36

6) Would allow to make plans

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	-/3	-/3	-/3	2/3	-/3	-/3	-/3	-/3	Tot:2/36

7) Would give peace of mind/would like to get "all clear"

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	-/3	-/3	1/3	1/3	-/3	1/3	1/3	2/3	1/3	1/2	1/3	Tot:11/36

8) Might help prolong an active life/avoid infirm later years

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	2/3	-/3	-/3	1/3	-/3	-/3	2/3	1/3	1/3	2/3	1/3	Tot:10/36

9) Would do anything to improve my quality of life

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	-/3	1/3	-/3	-/3	-/3	1/3	-/3	-/3	Tot:3/36

10) Would make you take stock of the way you are living and focus the mind on healthy behaviour- things you are doing wrong etc.

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	2/3	1/3	-/3	-/3	1/3	-/3	1/3	-/3	-/3	1/3	Tot:8/36

11) Hard to diet/take up exercise

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	1/3	-/3	1/3	1/3	1/3	1/3	1/3	1/3	3/3	-/3	-/3	Tot:10/36

12) Be told to stop smoking/cut drinking

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	-/3	1/3	1/3	1/3	2/3	1/3	-/3	1/3	2/3	-/3	Tot:11/36

13) Nobody really wants to be lectured

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	1/3	1/3	-/3	1/3	-/3	1/3	1/3	1/3	2/3	Tot:9/36

14) Difficult/inconvenient to get to surgery

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	-/3	1/3	-/3	1/3	1/3	-/3	-/3	-/3	-/3	1/3	Tot:6/36

15) Don't like going to the doctor at all if I can help it

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	1/3	1/3	-/3	-/3	1/3	-/3	1/3	-/3	Tot:5/36

16) Insufficient privacy at our health centre- receptionists loud and gossip

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	-/3	Tot:2/36

17) Not nice if not own doc- don't trust others so well

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	1/3	-/3	1/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	Tot:3/36

18) Could interfere with work/career prospects

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	1/3	-/3	-/2	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	Tot:4/36

CLINICAL TRIALS

1) Would only test if in severe health danger myself/ would have to actually have the problem, not just be at risk of it

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	1/3	1/3	1/3	2/3	2/3	2/3	-/3	3/3	1/3	2/3	-/3	Tot:17/36

2) Risking own health for no personal benefit

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	1/3	1/3	1/3	-/3	1/3	-/3	1/3	-/3	1/3	-/3	Tot:7/36

3) Would benefit others

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	3/3	3/3	2/3	1/3	-/3	3/3	3/3	1/3	1/3	-/3	2/3	Tot:20/36

4) Might benefit me - at the time or in the future

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	1/3	1/3	2/3	-/3	1/3	3/3	2/3	-/3	2/3	-/3	1/3	Tot:13/36

5) Someone has to be the guinea pig to test these medicines (not necessarily me)

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	3/3	1/3	2/3	1/3	1/3	1/3	3/3	1/3	1/3	-/3	2/3	Tot:16/36

6) Anti-vivisection, so if don't want animals used must be prepared to test yourself

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	1/3	-/3	-/3	-/3	-/3	1/3	1/3	-/3	-/3	Tot:3/36

7) Might do it if really pushed for money, but would have to be desperate

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	Tot:1/36

8) Doctor wouldn't ask you to do it if it wasn't pretty safe - boils down to how much you trust your doctor

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	1/3	1/3	-/3	-/3	1/3	-/3	2/3	-/3	2/3	1/3	-/3	Tot:8/36

9) Don't trust drug companies, and don't think docs always know enough- too easily swayed by the drug companies and their perks/profits

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	1/3	-/3	1/3	1/3	Tot:5/36

9a) Reckon the pharmaceutical companies have got it pretty well wrapped up, they don't put stuff out until it's already been pretty well tested on animals

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	-/3	-/3	-/3	Tot:1/36

10) Side effects

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
3/3	3/3	3/3	2/3	3/3	3/3	2/3	2/3	3/3	2/3	3/3	3/3	Tot:32/36

11) Could make you worse than you already are

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	2/3	1/3	1/3	1/3	-/3	1/3	-/3	2/3	-/3	2/3	1/3	Tot:13/36

12) Never know what the long term effects are

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	2/3	1/3	1/3	1/3	-/3	2/3	-/3	2/3	-/3	2/3	1/3	Tot:14/36

13) If you take any drug for a long time when it's not really necessary, your body might get used to it so it won't work when you really need it

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	2/3	1/3	1/3	1/3	-/3	1/3	-/3	1/3	1/3	-/3	1/3	Tot:10/36

14) Being used as guinea pig (pro & anti)

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	1/3	1/3	2/3	1/3	2/3	1/3	2/3	1/3	1/3	2/3	Tot:14/36

15) You'd have to keep a diary of pills taken, effects experienced etc.

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	Tot:1/36

16) If you had an 'Off day' or headache wouldn't know if it was normal or due to the pills/might imagine side effects

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	2/3	1/3	-/3	1/3	-/3	2/3	-/3	1/3	1/3	-/3	-/3	Tot:10/36

17) There's too much emphasis on drugs - should try alternative medicine

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	-/3	1/3	-/3	-/3	-/3	2/3	1/3	1/3	-/3	Tot:6/36

18) There should be some form of compensation if things go wrong, not like the troubles going on with Opren now, it should be automatic for anyone testing drugs

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	1/3	-/3	-/3	1/3	-/3	1/3	-/3	-/3	1/3	-/3	-/3	Tot:4/36

19) Wouldn't want to take any drugs for very long

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	-/3	2/3	1/3	1/3	-/3	-/3	1/3	-/3	2/3	-/3	Tot:9/36

20) Would want an awful lot of info. about the drug first

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	2/3	-/3	1/3	1/3	1/3	-/3	1/3	-/3	2/3	-/3	Tot:10/36

21) Would have to be a two-way interaction with feedback - not just a case of being used as a disposable subject

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	1/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	Tot:1/36

22) If I was at risk, I'd feel aggrieved to find out I'd had a placebo

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	1/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	Tot:1/36

23) If you're testing some drugs, you might not be given other drugs that may work- could potentially be putting yourself at a disadvantage

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	1/3	-/3	1/3	-/3	1/3	-/3	-/3	-/3	-/3	1/3	Tot:4/36

23a) Might have to stop taking current effective medication to test the new medicines

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	1/3	-/3	-/3	1/3	-/3	1/3	-/3	1/3	-/3	1/3	1/3	Tot:6/36

24) Already taking tablets - wouldn't really want to take many more- might not mix etc.

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	1/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	Tot:2/36

SALIENT REFERENTS

SCREENING

Spouse/partner

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
3/3	2/3	3/3	2/3	-/3	-/3	3/3	3/3	1/3	2/3	1/3	3/3	Tot:23/36

Parents

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	1/3	1/3	3/3	1/3	-/3	-/3	1/3	-/3	-/3	-/3	-/3	Tot:9/36

Children

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	1/3	-/3	1/3	1/3	2/3	-/3	1/3	1/3	3/3	3/3	2/3	Tot:17/36

Siblings

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	1/3	-/3	-/3	-/3	1/3	1/3	1/3	/3	-/3	Tot:5/36

Friends

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	1/3	-/3	1/3	1/3	1/3	2/3	-/3	1/3	-/3	-/3	1/3	Tot;9/36

GP/Consultant

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	1/3	Tot:2/36

Research Scientists

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	-/3	Tot:1/36

Governor at work/employer

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	2/3	-/3	-/3	-/3	2/3	1/3	-/3	-/3	-/3	1/3	Tot:6/36

My decision, doesn't really matter what others think

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	1/3	-/3	3/3	-/3	2/3	1/3	2/3	2/3	1/3	-/3	Tot:12/36

CLINICAL TRIALS

Spouse/partner

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
3/3	2/3	3/3	2/3	-/3	1/3	3/3	3/3	1/3	1/3	1/3	3/3	Tot:23/36

Parents

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	1/3	1/3	2/3	1/3	-/3	-/3	1/3	-/3	-/3	-/3	-/3	Tot:9/36

Children

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
2/3	-/3	-/3	-/3	2/3	2/3	1/3	-/3	1/3	3/3	1/3	2/3	Tot:14/36

Siblings

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	-/3	-/3	1/3	-/3	-/3	-/3	1/3	1/3	-/3	-/3	-/3	Tot:4/36

Friends

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
1/3	2/3	-/3	1/3	1/3	-/3	1/3	-/3	1/3	1/3	-/3	-/3	Tot:8/36

GP/Consultant

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	-/3	-/3	1/3	1/3	Tot:3/36

Research Scientists

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb	
-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	1/3	-/3	-/3	Tot:2/36

Pharmaceutical companies

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb
-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	-/3	1/3	-/3Tot:2/36

People who've got the problem pill is being tested for

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb
-/3	-/3	-/3	-/3	-/3	-/3	-/3	-/3	1/3	1/3	-/3	1/3Tot:3/36

Govenor/ people at work

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb
-/3	-/3	2/3	-/3	-/3	-/3	3/3	1/3	-/3	-/3	-/3	1/3 Tot:7/36

My decision, doesn't really matter what others think

1fa	1fb	1ma	1mb	2fa	2fb	2ma	2mb	3fa	3fb	3ma	3mb
-/3	1/3	2/3	1/3	3/3	3/3	2/3	2/3	2/3	2/3	1/3	-/3Tot:19/36

APPENDIX 14

SECOND STUDY QUESTIONNAIRE

The appended questionnaire is a copy of that used in the main follow-on study. Response frequencies are shown in each answer-option cell, the numbers in brackets indicate the percentage of the entire sample that each value represents. Missing values are also given in both raw score and sample percentage values.

Analysis code names are also given for each item.

Because very slightly different front pages were used for electoral roll and practice lists samples, both front pages are given (practice list sample page 53; electoral roll sample page 54.)

The GP-covering letter sent with the medical sampling source package, is given in appendix 16.

Applied Psychology Unit

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Cranfield

February 1988

PREVENTIVE MEDICINE IN THE NHS - AN ATTITUDE SURVEY

PLEASE HELP US TO HELP GPs GIVE THE SERVICE YOU WANT BY TELLING US HOW YOU FEEL ABOUT HEALTH CHECKS AND THE TESTING OF MEDICINES TO TRY TO PREVENT HEART ATTACKS AND STROKES.

WE DO NOT WANT YOUR NAME OR ADDRESS, JUST YOUR OPINIONS AND MOST OF THESE CAN BE GIVEN BY SIMPLE 'TICK IN THE BOX' ANSWERS ON THIS QUESTIONNAIRE.

WE HAVE PROVIDED A FREEPOST RETURN ENVELOPE, SO ALL WE ARE ASKING FOR IS A LITTLE OF YOUR TIME TO HELP US UNDERSTAND HOW PEOPLE FEEL ABOUT PREVENTIVE MEDICINE AND WHAT SORT OF THINGS MIGHT WORRY THEM ABOUT IT.

WE NEED INFORMATION FROM AS MANY PEOPLE AS POSSIBLE COVERING ALL POINTS OF VIEW. SO, WHETHER YOU HAVE STRONG FEELINGS ON THE MATTER OR NOT, YOUR OPINIONS ARE EQUALLY IMPORTANT TO US AND WE WILL BE VERY GRATEFUL FOR YOUR HELP.

Your name was selected at random from the list of patients registered with your doctor. We have no record of the people chosen, and as there are no names or addresses on the questionnaire, all information given will be completely anonymous.

If you would like any further information about this survey please contact Rachel Asch at the above address.

THANK YOU VERY MUCH FOR YOUR TIME AND CO-OPERATION.

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WE NEED INFORMATION FROM AS MANY PEOPLE AS POSSIBLE COVERING ALL POINTS OF VIEW. SO, WHETHER YOU HAVE STRONG FEELINGS ON THE MATTER OR NOT, YOUR OPINIONS ARE EQUALLY IMPORTANT TO US AND WE WILL BE VERY GRATEFUL FOR YOUR HELP.

Your name was selected, at random, from the electoral roll. We have no record of the people chosen, and as there are no names or addresses on the questionnaire, all information given will be completely anonymous.

If you would like any further information about this survey please contact Rachel Asch at the above address.

THANK YOU VERY MUCH FOR YOUR TIME AND CO-OPERATION.

PART 1
Health Checks

In this section of the questionnaire we would like to ask you about your feelings towards health checks designed to find out whether or not you are at increased risk of developing a heart attack or stroke.

The sort of health checks we are talking about are fairly simple ones carried out by the General Practitioner or the practice nurse. People are weighed, have their blood pressure and blood cholesterol measured, and are asked to give details of their diet, exercise levels, drinking and smoking habits etc.

PLEASE NOTE:
Some of the questions in this section are very similar, but they do ask slightly different things which we need to know.
For example, on page 3 you are asked to show how likely you think it is that certain things would happen if you had the health check, and on page 4 you are asked to show how good or bad you think these things would be for you. It is important to our proper understanding of the results that you answer every question.

To answer the questions you just have to put a tick in the box that best describes your feelings.

If you would like to make any extra comments, please use the space provided at the end of the section.

Although we do not ask for any names or addresses, we would appreciate it if you would answer a few questions about yourself. Please answer by ticking one box for each question, or, where appropriate, by writing your answer on the lines provided.

A) AGE: MV=3 (0.4)

18-24	25-44	45- Retirement	Retirement +
68 (9.8)	325 (46.8)	181 (26.0)	118 (17.0)

AGE

B) SEX: Male [329] (47.3) Female [366] (52.7) SEX

C) MARITAL STATUS:

Married / Cohabiting [518] (74.5) Divorced/ Separated [40] (5.8) Widowed [29] (4.2) Single [107] (15.4)

MARRY MV= 1 (0.1)

D) Do you live:

Alone [85] (12.2) With Others [602] (86.6)

LIVE MV= 8 (1.1)

E) CHILDREN - if you have children please write in how many in each age group:

0-4 [71] (10.2) 5-18 [123] (17.7) Over 18 [219] (31.5)

CHILD

+ 93 (13.4) 2 more than one age group

189 (27.2) either no children or Missing value

F) EMPLOYMENT:

Are you currently:

Self Employed [46] (6.6) Employed Full Time [323] (46.5) Employed Part Time [99] (14.2) Unemployed [24] (3.5) Retired [104] (15.0) Other eg. Housewife [99] (14.2)

EMPLOY

If other (please specify).....

G) Is (or was) your *usual* employment:

USEMP MV = 10 (1.4)

Professional.....	177	(25.5)
Employer/Manager.....	82	(11.8)
Other non-manual.....	150	(21.6)
Skilled manual.....	93	(13.4)
Semi-skilled.....	68	(9.8)
Unskilled.....	65	(9.4)
Armed Forces.....	4	(0.6)
Other eg.housewife/student	46	(6.6)

(note - if you are unemployed or retired, please answer (G) above by showing what type of work you usually do/did)

H) If you are married/cohabiting, please tick the box that best describes the usual occupation of your partner. This includes people whose partners are now retired or unemployed.

Manual [159] (22.9) Non-Manual [274] (39.4) No Usual Employment [89] (12.8)

SPSEMP MV= 173 (24.9)

MV = missing values

numbers in Brackets = percentage of sample

Please answer each question to show **how you would feel** if you were offered a health check within the next 12 months, and do so by putting a tick in the box which best describes <u>your feelings.</u> **Please tick only one box for each question.**

1. If your doctor was offering health checks to find out if people are at risk of developing a heart attack or stroke, would you make an appointment and go along for the health check?

INTYES MIL

Definitely Yes	Yes	Possibly Yes	Not Sure	Possibly Not	No	Definitely Not
377 (54·2)	155 (22·3)	97 (14·0)	19 (2·7)	21 (3·0)	22 (3·2)	3 (0·4)

1 (0·1)

2. How much, *in general*, are you for or against health checks like these?

GENATT

Very Much For	Quite For	Slightly For	Not Sure	Slightly Against	Quite Against	Very Much Against
492 (70·8)	149 (21·4)	29 (4·2)	15 (2·2)	6 (0·9)	1 (0·1)	0 –

3 (0·4)

3. How good or bad do you feel it would be *for you* to have the health check?

GDHAVE

Very Good	Quite Good	Slightly Good	Not Sure	Slightly Bad	Quite Bad	Very Bad
433 (62·3)	175 (25·2)	42 (6·0)	34 (4·9)	6 (0·9)	1 (0·1)	2 (0·3)

2 (0·3)

4. Do most people who are important to you think that you should have the health check if it is offered to you?

SOCN

Definitely Yes	Yes	Possibly Yes	Not Sure	Possibly Not	No	Definitely Not
336 48·3	212 30·5	77 11·1	51 7·3	9 1·3	7 1·0	0 –

3 (0·4)

5. Do you personally think that you *ought* to have the health check if it is offered to you?

PERSN

Definitely Yes	Yes	Possibly Yes	Not Sure	Possibly Not	No	Definitely Not
387 (55·7)	217 (31·2)	63 (9·1)	10 (1·4)	3 (0·4)	13 (1·9)	1 (0·1)

1 (0·1)

6. How likely do you think it is that your doctor will be offering this sort of health check within the next 12 months?

LKLY

Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
81 (11·7)	87 (12·5)	38 (5·5)	198 (28·5)	37 (5·3)	91 (13·1)	160 (23·0)

*In this section you are asked to show how likely or unlikely you believe the following statements would be **for you**, if you had the health check. Please tick one box for each question.*

IF I HAD THE HEALTH CHECK:

	Very Likely	Quite Likely	Slightly Likely	Unsure	Slightly Unlikely	Quite Unlikely	Very Unlikely	MV's
7. I'd definitely find out whether or not I was at risk of developing a heart attack or stroke	256 (36·8)	265 (38·1)	54 (7·8)	72 (10·4)	7 (1·0)	19 (2·7)	10 (1·4)	DET 12 (1·7)
8. I'd want to be told straight if I was at risk of getting a heart attack or stroke	559 (80·4)	84 (12·1)	14 (2·0)	15 (2·2)	3 (0·4)	6 (0·9)	3 (0·4)	STRGHT 11 (1·6)
9. I'd get peace of mind if I got the "all clear"	509 (73·2)	113 (16·3)	23 (3·3)	19 (2·7)	2 (0·3)	6 (0·9)	5 (0·7)	PEACE 18 (2·6)
10. I would be able to take preventive measures if I knew I was at increased risk	483 (69·5)	143 (20·6)	31 (4·5)	15 (2·2)	4 (0·6)	2 (0·3)	8 (1·2)	PREVNS 9 (1·3)
11. I would be told the best preventive measures to take	445 (64·0)	172 (24·7)	34 (4·9)	23 (3·3)	3 (0·4)	3 (0·4)	3 (0·4)	TLDAMS 12 (1·7)
12. I would improve my chances of staying fit and healthy for longer	399 (57·4)	197 (28·3)	55 (7·9)	20 (2·9)	6 (0·9)	3 (0·4)	6 (0·9)	FIT 9 (1·3)
13. I would lessen my chances of becoming infirm in my later years	292 (42·0)	214 (30·8)	73 (10·5)	70 (10·1)	12 (1·7)	9 (1·3)	11 (1·6)	INFRM 14 (2·0)
14. My doctor would give me a lecture	147 (21·2)	151 (21·7)	78 (11·2)	105 (15·1)	46 (6·6)	54 (7·8)	92 (13·2)	LECT 22 (3·2)
15. I would probably be told to give up smoking **(non-smokers please mark here only: [467])** (67·2)	160 (23·9)	36 (5·2)	8 (1·2)	4 (0·6)	1 (0·1)	2 (0·3)	3 (0·4)	SMOKE 14 (2·0)
16. I would probably be told to reduce my drinking **(non/rare drinkers please mark here only: [423])** (60·9)	70 (10·1)	68 (9·8)	32 (4·6)	15 (2·2)	19 (2·7)	23 (3·3)	32 (4·6)	DRINK 13 (1·9)
17. I would probably be told to change my diet **('healthy' eaters - ie. those already on low fat, low salt, high fibre diets please mark here only: [178])** (25·6)	158 (22·7)	145 (20·9)	77 (11·1)	56 (8·1)	27 (3·9)	20 (2·9)	23 (3·3)	EAT 11 (1·6)
18. I would probably be told to take up some form of exercise **(regular exercisers please mark here only: [193])** (27·8)	143 (20·6)	182 (26·2)	73 (10·5)	44 (6·3)	21 (3·0)	10 (1·4)	13 (1·9)	EXERC 16 (2·3)
19. It would make me take stock of my unhealthy habits and spur me on to change to a more healthy style of living	240 (34·5)	229 (32·9)	105 (15·1)	33 (4·7)	17 (2·4)	26 (3·7)	29 (4·2)	SPUR 16 (2·3)

In this section we ask you to show how good or bad you consider each of the following things to be <u>for you</u>.

FOR ME, THE FOLLOWING THINGS WOULD BE:

	Very Good	Quite Good	Slightly Good	Unsure	Slightly Bad	Quite Bad	Very Bad
20. Finding out whether or not I was at increased risk of a heart attack or stroke	416 (59.9)	150 (21.6)	32 (4.6)	40 (5.8)	13 (1.9)	17 (2.4)	10 (1.4)
21. Being told straight (if I <u>was</u> at risk)	487 (70.1)	117 (16.8)	21 (3.0)	30 (4.3)	8 (1.2)	10 (1.4)	7 (1.0)
22. Having peace of mind by getting the "all clear"	509 (74.7)	103 (14.8)	26 (3.7)	24 (3.5)	2 (0.3)	0 —	0 —
23. Being able to take preventive measures if I knew I was at increased risk	474 (68.2)	150 (21.6)	36 (5.2)	19 (2.7)	0 —	0 —	1 (0.1)
24. Being told the best preventive measures to take	497 (71.5)	134 (19.3)	31 (4.5)	15 (2.2)	1 (0.1)	0 —	0 —
25. Improving my chances of staying fit and healthy for longer	480 (69.1)	141 (20.3)	41 (5.9)	16 (2.3)	2 (0.3)	0 —	1 (0.1)
26. Lessening my chances of becoming infirm in my later years	441 (63.5)	147 (21.2)	29 (4.2)	57 (8.2)	3 (0.4)	1 (0.1)	0
27. Getting a lecture from my doctor	172 (24.7)	157 (22.6)	105 (15.1)	129 (18.6)	50 (7.2)	24 (3.5)	35 (5.0)
28. Being told to give up smoking (non-smokers please mark here only: [455] (65.5))	81 (4.7)	40 (5.8)	23 (3.3)	25 (3.6)	30 (4.3)	13 (1.9)	12 (1.7)
29. Being told to reduce my drinking (non/rare drinkers please mark here only: [438] (63.0))	50 (7.2)	46 (6.6)	42 (6.0)	62 (8.9)	21 (3.0)	14 (2.0)	7 (1.0)
30. Being told to change my diet ('healthy' eaters–ie those already on low fat, low salt, high fibre diets please mark here only: [184] (26.5))	139 (20.0)	150 (21.6)	80 (11.5)	76 (10.9)	25 (3.6)	10 (1.4)	17 (2.4)
31. Being told to take up some form of exercise (regular exercisers please mark here only: [191] (27.5))	132 (19.1)	166 (23.9)	91 (13.1)	61 (8.8)	19 (2.7)	7 (1.0)	8 (1.2)
32. Having to take stock of my unhealthy habits and be spurred on to change to a more healthy style of living	262 (37.7)	214 (30.8)	89 (12.8)	63 (9.1)	23 (3.3)	8 (1.2)	7 (2.4)

MV:

OETA 17 (2.4)
STRGHTF 15 (2.2)
PEACEA 21 (3.0)
PREVMSA 15 (2.2)
TLDMSA 17 (2.4)
FITA 14 (2.0)
INFRMA 17 (2.4)
LECTA 23 (3.3)
SMOKA 16 (2.3)
DRINKA 15 (2.2)
EATA 14 (2.0)
EXERCA 20 (2.9)
SPURA 19 (2.7)

How much do *you* think that each of the following things may put people at extra risk of developing a heart attack or stroke?

	Very Much	Quite A Lot	A Little	Not Sure	Not Very Much	Hardly At All	Not At All
33. Being overweight	389 (56.0)	253 (36.4)	39 (5.6)	2 (0.3)	4 (0.6)	2 (0.3)	2 (0.3)
34. Eating lots of fatty foods	435 (62.6)	207 (29.8)	35 (5.0)	6 (0.9)	5 (0.7)	1 (0.1)	1 (0.1)
35. Regular smoking	433 (62.3)	167 (24.0)	56 (8.0)	22 (3.2)	8 (1.1)	1 (0.1)	3 (0.6)
36. Regular drinking (alcohol)	305 (43.9)	204 (29.1)	122 (17.6)	31 (4.5)	19 (2.7)	4 (0.6)	2 (0.3)
37. Lack of regular exercise	223 (32.1)	258 (37.1)	155 (22.3)	28 (4.0)	21 (3.0)	2 (0.3)	0 —
38. Stress or worry	394 (56.7)	226 (32.5)	47 (6.8)	16 (2.3)	6 (0.9)	0 —	1 (0.1)
39. Having high blood pressure	452 (65.0)	176 (25.3)	34 (4.9)	23 (3.3)	1 (0.1)	2 (0.3)	2 (0.3)
40. Having high cholesterol	433 (62.3)	178 (25.6)	36 (5.2)	35 (5.0)	4 (0.6)	0 —	3 (0.4)
41. Having a close relative who has had a heart attack or stroke	184 (26.5)	170 (24.5)	122 (17.6)	116 (16.7)	44 (6.3)	13 (1.9)	41 (5.9)

MVs
OWGHT 4(0.6)
FATTY 5(0.7)
REGSMK 5(0.7)
REGDRNK 8(1.2)
LACKEX 8(1.2)
STRESS 5(0.7)
HIGHBP 5(0.7)
HIGHCOL 6(0.9)
REL 5(0.7)

Also, please tick just one box to show which, if any, of the following occupational groups you think may be most at risk of getting a heart attack or stroke.

Executives	458	Other office Workers	49	Manual Workers	76	Unemployed	47	None	45
	(65.9)		(7.1)		(10.9)		(6.8)		(6.5)

RISKGP MV=20 (2.9)

Finally, in this section, please show how much <u>you think</u> the following people would be for, or against, <u>you</u> having a health check to find out whether or not you were at increased risk of developing a heart attack or stroke.

	IN FAVOUR				AGAINST *			
	Very Much	Quite A Lot	A Little	Not Sure	A Little	Quite A Lot	Very Much	Doesn't Apply
Your spouse/partner	422 (60.7)	105 (15.1)	22 (3.2)	7 (1.0)	4 (0.6)	3 (0.4)	0 —	88 (12.7)
Your children	309 (44.5)	91 (13.1)	26 (3.7)	31 (4.5)	2 (0.3)	1 (0.1)	0 —	174 (25.0)
Your parents	233 (33.5)	131 (18.8)	52 (7.5)	39 (5.6)	2 (0.3)	2 (0.3)	0 —	166 (23.9)
Your friends	216 (31.1)	165 (23.7)	115 (16.5)	107 (15.4)	1 (0.1)	3 (0.4)	0 —	53 (7.6)

SPNOR 4(0.6)
CNORM 6(0.9)
PNORM 7(1.0)
FNORM 3(0.4)

Generally speaking, how much do you want to do what these people think you should do?

	Very Much	Quite A Lot	A Little	Not At All	Doesn't Apply
Your spouse/partner	289 (41.6)	186 (26.8)	71 (10.2)	7 (1.0)	97 (14.0)
Your children	225 (32.4)	138 (19.9)	71 (10.2)	11 (1.6)	182 (26.2)
Your parents	136 (19.6)	151 (21.7)	121 (17.4)	34 (4.9)	180 (25.9)
Your friends	126 (18.1)	161 (23.2)	199 (28.6)	75 (10.8)	84 (12.1)

MVs
COMPSP 44(6.5)
COMPC 61(9.0)
COMPP 70(10.3)
COMPF 35(5.0)

Please mark the box which best describes your behaviour regarding the following statement;

"I usually try to do what I think I ought to do"

Almost Always	124	Most of the time	411	Some of the time	144	Almost Never	13
	(17.8)		(59.1)		(20.7)		(1.9)

COMPSLF MV=36(4)

PART 2
PILL TESTING

In the next section we would like to know how you feel about taking part in studies that involve the testing of pills which doctors believe may help to prevent heart attacks and strokes.

We are interested in your feelings about two main types of studies. The first type of study involves the testing of brand new pills, the second type of study involves testing pills that are already well established treatments for other problems, to find out if they would also be useful in helping to hold off heart attacks and strokes.

When any new medicines are developed they must undergo strict scientific testing before they can be considered for general use. Most of this testing takes place in the laboratory but in the end, medicines that are intended for use by humans must be tested by humans.

Similarly, although there may be strong medical beliefs that a well known pill may help to hold off heart attacks and strokes in some people, the only way to be sure of its value is to scientifically test the pill in people who are already at risk of these problems.

In the first part of this section you are asked to state your intentions regarding taking part in the testing of pills if you were asked to do so. Obviously, this decision will depend on a variety of things and so you are asked to rate your intentions for several different circumstances.

There are no right or wrong answers to any of the following questions. We need to know what the true public opinion is, so please answer the questions to show us what you really feel.
If you feel that there are any other things which may play a part in helping you to make up your mind whether or not to take part in the testing of pills, please write them in in the space provided below the questions. Your comments will be greatly appreciated.

First, we would like to know how you feel about taking part in the testing of: (A) brand new pills ; and (B) Other pills that are already in use as remedies for some problems, but which doctors think may also help to prevent heart attacks or strokes.

Please put a tick in the box which best describes your feelings towards each of the following statements, for both (A) New pills , and (B) Other pills.

1. I would be willing to help test pills if I was in severe health danger and these pills were a last resort MVs

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	382 (55.0)	153 (22.0)	35 (5.0)	51 (7.3)	6 (0.9)	11 (1.6)	50 (7.2)
B) Other pills:	443 (63.7)	139 (20.0)	27 (3.9)	38 (5.5)	4 (0.6)	8 (1.2)	27 (3.9)

LSTRESA 7 (1.0)
LSTRESB 9 (1.3)

2. I would be willing to help test pills if I was at quite high risk of a heart attack or stroke

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	188 (27.0)	193 (27.8)	112 (16.1)	100 (14.4)	25 (3.6)	14 (2.0)	56 (8.1)
B) Other pills:	259 (37.3)	224 (32.2)	84 (12.1)	59 (8.5)	13 (1.9)	17 (2.4)	29 (4.2)

HIGHRSKA 7 (1.0)
HIGHRSKB 10 (1.4)

3. I would be willing to help test pills if I was at *any* extra risk of a heart attack or stroke

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	148 (21.3)	141 (20.3)	116 (16.7)	126 (18.1)	32 (4.6)	42 (6.0)	83 (11.9)
B) Other pills:	183 (26.3)	188 (27.1)	119 (17.1)	83 (11.9)	25 (3.6)	32 (4.6)	56 (8.1)

ANYRSKA 7 (1.0)
ANYRSKB 9 (1.3)

4. I would be willing to help test pills in order to benefit others

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	58 (8.3)	87 (12.5)	72 (10.4)	193 (27.8)	58 (8.3)	48 (6.9)	172 (24.7)
B) Other pills:	69 (9.9)	113 (16.3)	89 (12.8)	181 (26.0)	46 (6.6)	51 (7.3)	137 (19.7)

BENOA 7 (1.0)
BENOB 9 (1.3)

5. I would be willing to take part in the testing of pills even if I was already on other medication

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	40 (5.8)	68 (9.8)	43 (6.2)	193 (27.8)	41 (5.9)	78 (11.2)	225 (32.4)
B) Other pills:	44 (6.3)	79 (11.4)	54 (7.8)	189 (27.2)	48 (6.9)	69 (9.9)	199 (28.6)

ONMEDA 7 (1.0)
ONMEDB 13 (1.7)

6. I would want a great deal of information about the pills and their possible side effects before I would agree to help test them

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills;	531 (76.4)	78 (11.2)	22 (3.2)	20 (2.9)	1 (0.1)	7 (1.0)	28 (4.0)
B) Other pills;	474 (68.2)	114 (16.4)	31 (4.5)	22 (3.2)	3 (0.4)	5 (0.7)	28 (4.0)

INTOA 8 (1.2)
INTOB 18 (2.6)

7. I might agree to help test pills if my doctor asked me to, but then change my mind when I got home and just not take the pills

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills;	35 (5.0)	62 (8.9)	52 (7.5)	75 (10.8)	56 (8.1)	115 (16.5)	288 (41.4)
B) Other pills;	31 (4.5)	60 (8.6)	48 (6.9)	68 (9.8)	60 (8.6)	113 (16.3)	294 (42.3)

CHANGEA 12 (1.7)
CHANGEB 21 (3.0)

8. On the whole, I think that if my doctor asked me to take part in the testing of some pills, I would agree to do so

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills;	94 (13.5)	119 (17.1)	88 (12.7)	147 (21.2)	39 (5.6)	55 (7.9)	143 (20.6)
B) Other pills;	104 (15.0)	136 (19.6)	93 (13.4)	130 (18.7)	46 (6.6)	45 (6.5)	124 (17.8)

YESTSTA 10 (1.4)
YESTSTB 17 (2.4)

9. On the whole, I think that if my doctor asked me to take part in the testing of some pills, I would refuse to do so

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills;	146 (21.0)	73 (10.5)	59 (8.5)	150 (21.6)	70 (10.1)	87 (12.5)	100 (14.4)
B) Other pills;	124 (17.8)	69 (9.9)	67 (9.6)	148 (21.3)	84 (12.1)	89 (12.8)	104 (15.0)

NOTSTA 10 (1.4)
NOTSTB 10 (1.4)

10. On the whole, do you think that it would be a good thing or a bad thing for you to help in pill- testing

	Very Good	Quite Good	Slightly Good	Not Sure	Slightly Bad	Quite Bad	Very Bad
A) New pills;	63 (9.1)	122 (17.6)	73 (10.5)	234 (33.7)	51 (7.3)	60 (8.6)	82 (11.8)
B) Other pills;	65 (9.4)	128 (18.4)	94 (13.5)	220 (31.7)	47 (6.8)	52 (7.5)	73 (10.5)

GDHEADA 10 (1.4)
GDHEADB 16 (2.3)

11. **Most people who are important to me think that I should take part in pill-testing if my doctor asked me to**

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	45 (6·5)	71 (10·2)	45 (6·5)	208 (29·9)	52 (7·5)	72 (10·4)	191 (27·5)
B) Other pills:	47 (6·8)	71 (10·2)	62 (8·9)	205 (29·5)	63 (9·1)	64 (9·2)	165 (23·7)

SNORMA 11 (1·6)
SNORMB 18 (2·6)

12. **I personally feel that I *ought* to take part in the testing of pills if my doctor asked me to**

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	79 (11·4)	122 (17·6)	86 (12·4)	139 (20·0)	49 (7·1)	65 (9·4)	146 (21·0)
B) Other pills:	94 (13·5)	124 (17·8)	94 (13·5)	130 (18·7)	46 (6·6)	55 (7·9)	136 (19·6)

PNORMA 9 (1·3)
PNORMB 16 (2·3)

13. **I think that the liklihood of my doctor asking me to take part in a study involving pill testing is:**

	Very Likely	Quite Likely	Slightly Likely	Not Sure	Slightly Unlikely	Quite Unlikely	Very Unlikely
A) New pills:	21 (3·0)	22 (3·2)	47 (6·8)	80 (11·5)	71 (10·2)	151 (21·7)	295 (42·4)
B) Other pills:	20 (2·9)	25 (3·6)	53 (7·6)	77 (11·1)	77 (11·1)	145 (20·9)	282 (40·6)

PLKLYA 8 (1·2)
PLKLYB 16 (2·3)

Please write in the space below, anything else you can think of which might encourage you to take part in the testing of pills, or put you off doing so:

In this section we ask you to rate how likely or unlikely you believe it is that the following statements would be true, if you took part in the testing of any pills.

IF I TOOK PART IN THE TESTING OF PILLS:

	Very Likely	Quite Likely	Slightly Likely	Unsure	Slightly Unlikely	Quite Unlikely	Very Unlikely	
14. My doctor would give me all the information I wanted about the study	288 (41.4)	185 (26.6)	65 (9.4)	68 (9.8)	16 (2.3)	27 (3.9)	36 (5.2)	STINX 10 (1.4)
15. My doctor would give me all the information I wanted about the pills being tested	269 (38.6)	187 (26.9)	66 (9.5)	74 (10.6)	28 (4.0)	25 (3.6)	35 (5.0)	PINPO 11 (1.6)
16. I would be able to ask my doctor for any information I wanted	380 (54.7)	172 (24.7)	42 (6.0)	42 (6.0)	15 (2.2)	14 (2.0)	20 (2.9)	ASKING 10 (1.4)
17. If I got a headache, or felt 'off colour' whilst taking the pills, I wouldn't know if this was normal, or due to the pills and this would worry me	294 (42.3)	188 (27.1)	76 (10.9)	43 (6.2)	23 (3.3)	22 (3.2)	34 (4.9)	OFFCOL 15 (2.2)
18. I would be risking my health eg. by possible side effects.	204 (29.4)	158 (22.7)	148 (21.3)	111 (16.0)	25 (3.6)	22 (3.2)	15 (2.2)	SEFFS 12 (1.7)
19. I would be contributing to knowledge which might benefit me, now or in the future	227 (32.7)	237 (34.1)	107 (15.4)	80 (11.5)	7 (1.0)	9 (1.3)	16 (2.3)	CONTRE 12 (1.7)
20. I would be contributing to knowledge which might benefit others	284 (40.9)	247 (35.5)	79 (11.4)	54 (7.8)	4 (0.6)	5 (0.7)	12 (1.7)	CONTO 10 (1.4)
21. I would be serving as a 'Guinea Pig'	378 (54.6)	164 (23.6)	63 (9.1)	45 (6.5)	11 (1.6)	4 (0.6)	17 (2.4)	GPIG 13 (1.9)
22. The pills might have some long term effects that no-one has any idea about	253 (36.4)	183 (26.3)	136 (19.6)	70 (10.1)	20 (2.9)	11 (1.6)	11 (1.6)	LGEFFS 11 (1.6)
23. If I was testing pills to try to prevent something, they might not work if I ever really needed them	91 (13.1)	125 (18.0)	122 (17.6)	189 (27.2)	61 (8.8)	52 (7.5)	44 (6.3)	NOTWRK 11 (1.6)
24. If I agreed to take part in the testing of some pills, my doctor might take me off other good pills I'm already taking	112 (16.1)	107 (15.4)	51 (7.3)	181 (26.0)	59 (8.5)	52 (7.5)	112 (16.1)	OTHGB 21 (3.0)

In this section we ask you to show how good or bad you consider each of the following things to be, <u>for you</u>.

FOR ME, THE FOLLOWING THINGS WOULD BE:

	Very Good	Quite Good	Slightly Good	Unsure	Slightly Bad	Quite Bad	Very Bad	
25. Being given all the information I wanted about the study	535 (77·0)	106 (15·3)	24 (3·4)	16 (2·3)	1 (0·1)	0 —	1 (0·1)	STINZOA 12 (1·7)
26. Being given all the information I wanted about the pills being tested	541 (77·8)	99 (14·2)	17 (2·4)	21 (3·0)	0 —	1 (0·1)	1 (0·1)	PINZOA 15 (2·2)
27. Being able to ask for any information I wanted	573 (82·4)	76 (10·9)	19 (2·7)	10 (1·4)	1 (0·1)	0 —	1 (0·1)	ASKINZA 15 (2·2)
28. Being worried by not knowing if a headache or feeling 'off colour' was normal, or due to the pills being tested	73 (10·5)	50 (7·2)	20 (2·9)	126 (18·1)	127 (18·3)	147 (21·2)	136 (19·6)	OFFOLA 16 (2·3)
29. Risking my health, eg. by possible side effects.	48 (6·9)	24 (3·5)	17 (2·4)	98 (14·1)	105 (15·1)	162 (23·3)	223 (32·1)	SE??SA 18 (2·6)
30. Contributing to knowledge which might benefit me, now or in the future	223 (32·1)	206 (29·6)	134 (19·3)	97 (14·0)	4 (0·6)	3 (0·4)	6 (0·9)	CONTMEK 22 (3·2)
31. Contributing to knowledge which might benefit others	255 (36·7)	206 (29·6)	117 (16·8)	88 (12·7)	3 (0·4)	1 (0·1)	5 (0·7)	CONTOA 20 (2·9)
32. Serving as a 'Guinea Pig'	55 (7·9)	40 (5·8)	59 (8·5)	182 (26·2)	106 (15·3)	81 (11·7)	157 (22·6)	GPIGA 15 (2·2)
33. Possible unforseen long term effects of the pill being tested	37 (5·3)	17 (2·4)	11 (1·6)	119 (17·1)	101 (14·5)	138 (19·9)	250 (36·0)	LG??SA 22 (3·2)
34. The possibility that pills being taken to try to prevent something, might not work if I ever really needed them	26 (3·7)	19 (2·7)	30 (4·3)	203 (29·2)	125 (18·0)	125 (18·0)	151 (21·7)	NOTOKA 16 (2·3)
35. The possibility of being taken off good pills I'm already taking, if I agreed to take part in the testing of some pills	32 (4·6)	17 (2·4)	24 (3·5)	203 (29·2)	106 (15·3)	123 (17·7)	164 (23·6)	OFFGSA 26 (3·7)

In this section the questions refer to things that might stop people taking <u>any</u> medicines prescribed by their doctor. We ask you to show how likely or unlikely each of the following statements would be for you

MVs

	Very Likely	Quite Likely	Slightly Likely	Unsure	Slightly Unlikely	Quite Unlikely	Very Unlikely	
36. I would find it hard to remember to take any medicines if I wasn't in pain or feeling poorly at the time	89 (12·8)	93 (13·4)	105 (15·1)	12 (1·7)	45 (6·5)	124 (17·8)	215 (30·9)	HRDREM 12 (1·7)
37. I would stop taking any medicines which made me feel worse than I did before	293 (42·2)	181 (26·0)	80 (11·5)	43 (6·2)	25 (3·6)	28 (4·0)	33 (4·7)	WORSE 12 (1·7)
38. I'd stop taking any medicines which I felt were giving me side effects	338 (48·6)	183 (26·3)	59 (8·5)	46 (6·6)	19 (2·7)	15 (2·2)	23 (3·3)	SIDEFFS 12 (1·7)
39. I would stop taking any medicines if I heard or read anything bad about them	219 (31·5)	141 (20·3)	109 (15·7)	118 (17·0)	27 (3·9)	33 (4·7)	37 (5·3)	BADPUB 11 (1·6)
40. I would stop taking medicines if I felt in myself that they were not doing me any good	174 (25·0)	158 (22·7)	97 (14·0)	79 (11·4)	66 (9·5)	60 (8·6)	46 (6·6)	NOTGD 15 (2·2)
41. I'd stop taking medicines if I didn't think I had enough information about them and had any doubts	248 (35·7)	174 (25·0)	75 (10·8)	60 (8·6)	50 (7·2)	36 (5·2)	40 (5·8)	DOUBTS 12 (1·7)
42. I might skip a dose or two if I was going out for a drink	80 (11·5)	70 (10·1)	73 (10·5)	59 (8·5)	59 (8·5)	82 (11·8)	241 (34·7)	SKIP 31 (4·5)
43. I would only stop taking medicines if my doctor told me to stop them	243 (35·0)	121 (17·4)	46 (6·6)	102 (14·7)	44 (6·3)	51 (7·3)	79 (11·4)	DOCSTP 9 (1·3)

In the last part of this section we would like to know what you think other people feel about you taking part in the testing of pills.

Please show how strongly for or against you taking part in the testing of pills, each of the following people would be if you were at risk of a heart attack or stroke and doctors thought the pills might help prevent these disorders.

44. A) How would these people feel about you helping to test brand new pills

	IN FAVOUR				AGAINST				
	Very Much	Quite A Lot	A Little	Not Sure	A Little	Quite A Lot	Very Much	Doesn't Apply	
Your spouse/partner	100 (14·4)	92 (13·2)	83 (11·9)	78 (11·2)	41 (5·9)	54 (7·8)	106 (15·2)	97 (13·9)	ANRMSP 44 (6·3)
Your children	76 (10·9)	63 (9·1)	53 (7·6)	97 (14·0)	40 (5·7)	34 (4·9)	72 (10·3)	191 (27·5)	ANRMC 69 (9·9)
Your parents	47 (6·8)	78 (11·2)	71 (10·2)	109 (15·7)	39 (5·6)	42 (6·0)	60 (8·6)	173 (24·9)	ANRMP 76 (10·9)
Your friends	42 (6·0)	83 (11·9)	89 (12·8)	210 (30·2)	43 (6·2)	42 (6·0)	46 (6·6)	81 (11·6)	ANRM7 59 (8·5)

B) How would these people feel about you helping to test other pills which may help to hold off heart attacks or stroke?

	IN FAVOUR				AGAINST				
	Very Much	Quite A Lot	A Little	Not Sure	A Little	Quite A Lot	Very Much	Doesn't Apply	
Your spouse/partner	117 (16·8)	120 (17·3)	99 (14·2)	71 (10·2)	33 (4·7)	43 (6·2)	68 (9·8)	99 (14·2)	BNRMSP 45 (6·5)
Your children	91 (13·1)	68 (9·8)	74 (10·6)	107 (15·4)	24 (3·4)	33 (4·7)	38 (5·5)	193 (27·8)	BNRMC 67 (9·6)
Your parents	58 (8·3)	95 (13·7)	79 (11·4)	114 (16·4)	28 (4·0)	33 (4·7)	36 (5·2)	172 (24·7)	BNRMP 80 (11·5)
Your friends	59 (8·4)	96 (13·8)	103 (14·8)	208 (29·9)	28 (4·0)	29 (4·2)	29 (4·2)	80 (11·5)	BNRM7 63 (9·1)

Generally speaking, how much do you want to do what these people think you should do?

	Very Much	Quite A Lot	A Little	Not At All	Doesn't Apply	
Your spouse/partner	202 (29·1)	189 (27·2)	110 (15·8)	37 (5·3)	111 (16·0)	CTCMPSP 46 (6·6)
Your children	128 (19·4)	157 (22·6)	104 (15·0)	42 (6·0)	197 (28·3)	CTCMPC 67 (9·6)
Your parents	74 (10·6)	137 (19·7)	163 (23·4)	52 (7·5)	189 (27·2)	CTCMPP 80 (11·5)
Your friends	62 (8·9)	121 (17·4)	229 (32·9)	124 (17·8)	100 (14·4)	CTCMP7 59 (8·5)

45. Please mark the box which best describes your behaviour regarding the following statement:

"I usually try to do what I think I ought to do"

Almost Always	Most of the time	Some of the time	Almost Never
136 (19·6)	403 (58·0)	132 (19·0)	10 (1·4)

CTCMPME 14 (2·5)

If you would like to make any other comments about pill testing, please do so on the back of this page.

Finally, we would like a little information about your health and past experiences, if any, of health checks and the testing of medicines.

(A) How would you rate your general health?

Excellent 89 (12·8) Good 469 (67·5) Fair 121 (17·4) Poor 10 (1·4)

GENHLTH 6 (0·9)

MVs

(B) How interested are you in your general health?

Very Interested 307 (44·2) Quite Interested 318 (45·7) Slightly Interested 58 (8·3) Not Really Interested 8 (1·2)

INTRST 4(0·6)

(C) How careful are you about what you eat to help yourself stay healthy?

Very Careful 81 (11·7) Quite Careful 348 (50·1) Slightly Careful 163 (23·4) Not Really Careful 98 (14·1)

DIET 5 (0·7)

(D) Do you think you are overweight?

By more than 2 stones 84 (12·1) By more than 1 stone 188 (27·0) Not really overweight 418 (60·1)

OVERWT 5(0·7)

(E) Have you ever been a smoker?

Current Smoker 204 (29·3) Ex Smoker 198 (28·5) Never Smoked 289 (41·6)

SMOKER 4(0·6)

(F) Do you drink alcohol?

Usually, at least 4 days a week 109 (15·7) Usually, at least once a week 204 (29·3) Only Occasionally 311 (44·7) Never 67 (9·6)

ALCOHOL 4(0·6)

(G) Do you take regular exercise of any sort?

Usually, at least 3 times a week 163 (23·4) Usually, at least once a week 151 (21·7) No Regular Pattern 375 (53·9)

REGEX 6(0·9)

What sort of exercise do you do,.....

REGEXA

(H) Have you ever suffered any:

(1) Heart Trouble Yes 56 (8·1) No 618 (88·9)

HT 21 (3·0)

(2) High Blood Pressure Problems Yes 104 (15·0) No 578 (83·2)

BP 13(1·9)

If yes, please specify:.....

(I) Have any of your relatives had a heart attack or stroke before they were 70?

(1) Heart Attack Yes 240 (34·5) No 437 (62·9)

HA 18 (2·6)

(2) Stroke Yes 123 (17·7) No 525 (75·5)

STROKE 47 (6·8)

(J) How would you rate your own risk of having a heart attack or stroke before you are 70? (those over 70 please go straight to question K)

OWNRSKH 39(5.6) + 23(3.3) N/A

OWNRSKS 78 (11.2) + 23 (3.3) N/A

(1) HEART ATTACK		(2) STROKE	
Quite High	74 (10.6)	Quite High	34 (4.9)
Average	340 (48.9)	Average	324 (46.6)
Quite Low	219 (31.5)	Quite Low	236 (34.0)

(K) Have you ever had your blood pressure tested?:

BPTST 9(1.3) + 144 (20.7) more than 1 opht

By your own doctor	363 (52.2)	by the practice nurse	70 (10.1)	at work	21 (3.0)	other	41 (5.9)	never been tested	47 (6.8)

If 'other' please specify:.....

(L) Have you ever had your blood cholesterol level tested?:

CHOLTST 13 (1.9) + 7 (1.0) more than 1 ophtn

By your own doctor	60 (8.6)	by the practice nurse	22 (3.2)	at work	4 (0.6)	other	29 (4.2)	never been tested	560 (80.6)

If 'other' please specify:.....

(M) Would you like to have these tests done regularly?

WANTBP 14(2.0)

WANTCHL 26(3.7)

(1) BLOOD PRESSURE				(2) CHOLESTEROL			
Yes	489 (70.4)	No	20 (2.9)	Yes	500 (71.9)	No	37 (5.3)
Not Sure	70 (10.1)	Already Have Regular Check	102 (14.7)	Not Sure	109 (15.7)	Already Have Regular Check	23 (3.3)

(N) If you had a choice, would you prefer to have these tests done by:

DOBP 9(1.3)

DOCHOL 18 (2.5)

(1) BLOOD PRESSURE		(2) CHOLESTEROL	
Your Own Doctor	430 (61.9)	Your Own Doctor	428 (61.6)
The Practice Nurse	168 (24.2)	The Practice Nurse	163 (23.4)
At Work	53 (7.6)	At Work	53 (7.6)
Other	15 (2.1)	Other	13 (1.9)
ANY	20 (2.9)	ANY	20 (2.9)

If 'other' please specify:.....

(O) Are you on any long-term medication at the moment?

MEDNOW 9 (1.3)

Yes 168 (24.2) No 518 (74.5)

(P) Have you ever been asked to help in pill testing?

PILTST 6 (0.9) (if Yes) Did you do so?

PILTSTA 6 (0.9) Would you do it again?

PILTSTB 6 (0.9)

Yes 20 (2.9) No 669 (96.2)

If NO → N/A

Yes 16 No 4 N/A 669 (96.3%)

Yes 14 No 6 N/A 669 (96.3)

Thank you very much for helping in this survey. Before sending back your questionnaire, please check that you have answered all the questions and made any comments you would like to make.

APPENDIX 15

MAIN STUDY SAMPLING PROCEDURE

The objective was to secure as random a sample as possible, from both the electoral roll and practice lists.

Sampling from the electoral roll was achieved via a straightforward sequential strategy. Firstly, the approximate number of names on the roll was ascertained. This number was then divided by 1000 - the number of people to be canvassed. The starting point was determined by use of random number tables, after which every nth name was chosen. Names and addresses were recorded directly onto sticky labels, so no record of those canvassed was kept.

A similar sequential sampling strategy was employed for selection of potential respondents from the medical sampling sources. In each case the approximate number of registered patients was divided by 250 (the number of potential respondents required from each practice), to determine the nth number. Again the starting point was decided by use of random number tables.

At two practices names were drawn directly from the note stack. When the nth person chosen was too young or too old for inclusion in the sample, the next set of notes within the required age range was selected. Because the electoral roll includes people aged 18 and above, the age range for practice sampling also started at 18.

Names and addresses were recorded from the notes cover. On no occasion were note envelopes opened, and medical confidentiality was rigorously upheld.

At the other two practices, selection was made from age/sex register cards, though an identical sampling strategy applied. The only difference was, that half the names were drawn from males, and half from females in these instances.

Once a complete set of names had been selected, they were presented to the GPs for vetting for suitability for canvassing. When GPs had approved the lists, names and addresses were copied onto sticky labels and the lists destroyed.

APPENDIX 16

GP-COVERING NOTE FOR POTENTIAL RESPONDENTS DRAWN FROM PRACTICE LISTS

(WRITTEN ON PRACTICE HEADED PAPER)

Date

Dear Sir/Madam,

Enclosed is a questionnaire about attitudes to preventive medicine in the NHS, especially concerning the prevention of heart attacks and strokes.

The survey is being carried out by a doctor based at Oxford university and a psychologist based at Cranfield Institute of Technology, as part of a nationwide study investigating ways in which GPs can help to reduce the number of heart attacks and strokes people suffer.

Your name was selected by these researchers, at random, from our list of patients. They have not seen your medical notes, nor will they ever do so.

There is no record of the names chosen from our list and no names or addresses are asked for on the questionnaire, so all responses will be entirely anonymous and no one will even know whether or not you do decide to take part in this survey.

However, although we are not personally involved in the survey, we do think that it is an important study, and if you feel you would like to take part your help would be greatly appreciated.

Yours Sincerely,

(Dr.(s)' Name(s)).

APPENDIX 17

PREDICTIVE ASSOCIATIONS BETWEEN BIM COMPONENTS FOR MEASURES PERTAINING TO TRIALS OF ESTABLISHED DRUGS

Figure 1 Predictive Associations Using The Basic BIM
(Relates to figure 3, p143 main text)

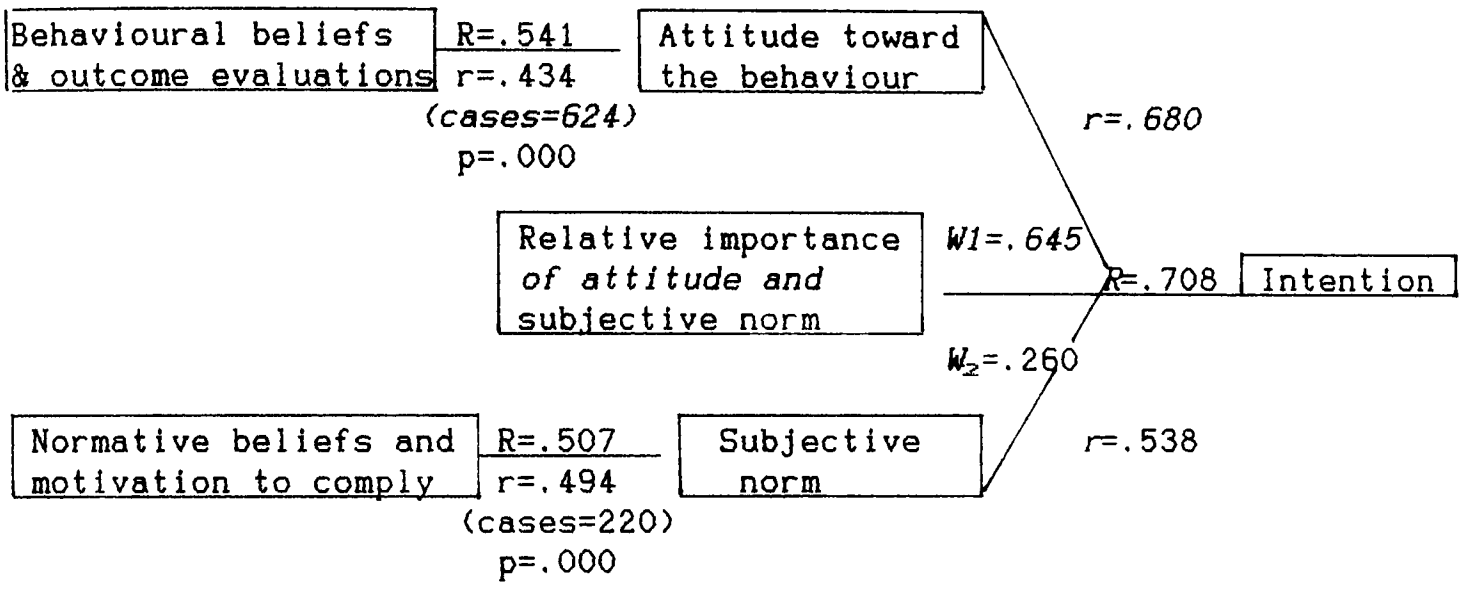
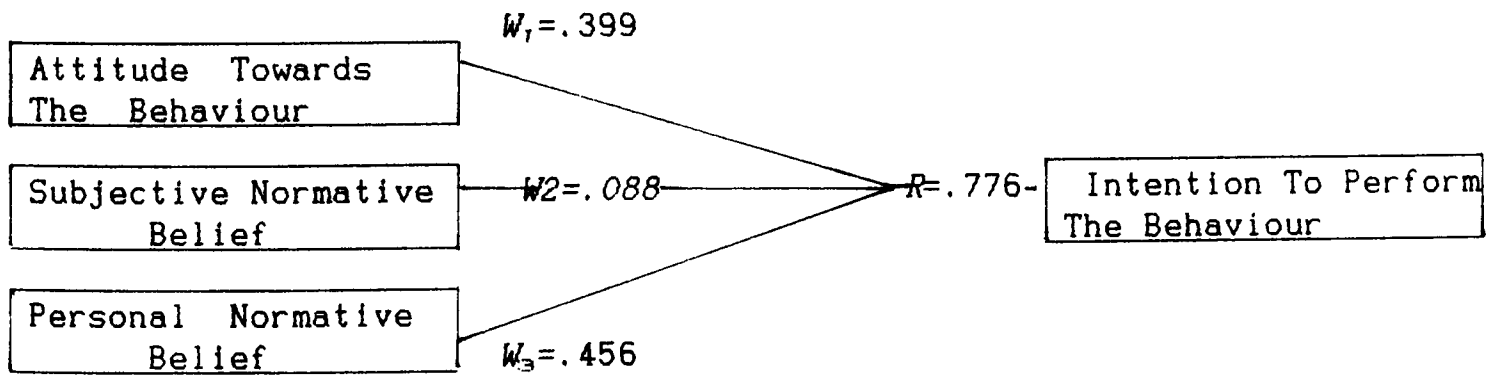


Figure 2 Prediction of Intention From Attitudes, subjective Norm and Personal Norm
(Relates to figure 4, p143 main text)



The following tables are summaries of multiple regression analyses as depicted in figures 1 and 2. Values shown in tables 1 and 2 below are those relating to 'other' pills. They correspond to tables 20 and 21, p144 main text, which give values for trials of 'new' pills.

TABLE 1 Summary of MRA with Intention to Participate in Clinical Trials of 'Other Pills' as the DV and Attitude and Subjective Norm as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered (In Order of Inclusion)	R^2 Change	B	Beta	Part Corr	Partial Corr	T	p
Multiple R	,707	Attitude	,461	,64	,55	,46	,54	16,62	,000
R Square	,500								
Adjusted R	,499	Subjective norm	,039	,26	,24	,20	,27	7,23	,000
F Value	332,580								
Significance	,0000								

TABLE 2 Summary of MRA with Intention to Participate in Clinical Trials of 'Other Pills' as the DV and Attitude, Subjective Norm and Personal Norm as the IVs

FINAL VALUES		VARIABLES IN THE EQUATION							
		Variable Entered (In Order of Inclusion)	R^2 Change	B	Beta	Part Corr	Partial Corr	T	p
Multiple R	,776	Personal Norm	,524	,45	,46	,32	,45	13,18	,000
R Square	,602								
Adjusted R	,600	Attitude	,074	,40	,34	,25	,36	10,07	,000
F Value	334,231								
Significance	,0000	Subjective Norm	,004	,09	,08	,06	,10	2,53	,011

APPENDIX 18

SUMMARY OF T-TESTS TO DETERMINE SUITABLE GROUPS FOR COMPARISON REGARDING INTENTION TO PARTICIPATE IN SCREENING FOR CARDIOVASCULAR RISK

Because the overwhelming majority of respondents indicated some degree of intention to participate in screening, it was not possible to make a comparison of beliefs between those who did and did not intent to participate. However, it was suspected that there might be some differences between those who indicated a very strong intention and those whose reported intentions were less strong. Therefore, t-tests were performed between the following groups, which together comprised 90.5% of all responses, to establish whether there were sufficient differences between them to justify the formulation of two comparison groups:

A) Groups 1 & 2 (representing respondents indicating the strongest and 2nd strongest degrees of intention to participate in screening - Definitely Yes & Yes respectively)

B) Groups 1 & 3 (representing respondents indicating the strongest and weakest positive intentions - Definitely Yes & Possibly Yes)

C) Groups 2 & 3 (representing respondents indicating the medium and weakest positive intentions - Yes & Possibly Yes)

Variables tested were all belief measures plus general attitude, personal attitude, subjective norm and personal norm.

As can be seen from the following summary tables, in respect of belief measures, there were significant differences on almost all belief measures between groups 1 & 2, and groups 1 & 3. However, almost no significant differences were found to exist between groups 2 & 3.

Also, although there were significant differences between all groups on the variables of attitude, subjective and personal norms, the magnitude of difference was much greater between groups 1 & 2, and groups 1 & 3, than they were for groups 2 & 3. Omega square values were similarly much larger for the first 2 comparison groups than for the 3rd.

Therefore, it seemed worthwhile to create a psuedo participant/non-participant group from these three sets by making group 1 respondents 'participants' and combining groups 2 & 3 into 'non-participants' for the purposes of belief investigations.

1 = Definitely Yes
2 = Yes
3 = Possibly Yes

n1=376; n2=154; n3=97

GENERAL ATTITUDE

	x̄1 (sd)	x̄2 (sd)	t	p	ω^2
1 V 2	1,0 (,22)	1,5 (,60)	9,7	,000	,15!
1 V 3	1,0 (,22)	1,9 (,79)	10,5	,000	,19!
2 V 3	1,5 (,60)	1,9 (,79)	3,9	,000	,05!

n1=376; n2=155; n3=97

PERSONAL ATTITUDE

	x̄1 (sd)	x̄2 (sd)	t	p	ω^2
1 V 2	1,1 (,38)	1,7 (,90)	8,3	,000	,11
1 V 3	1,1 (,38)	2,2 (,92)	11,3	,000	,21
2 V 3	1,7 (,90)	2,2 (,92)	3,8	,000	,01

n1=377; n2=154; n3=97

SUBJECTIVE NORM

	x̄1 (sd)	x̄2 (sd)	t	p	ω^2
1 V 2	1,4 (,79)	2,1 (,82)	8,7	,000	,12
1 V 3	1,4 (,79)	2,5 (1,1)	9,5	,000	,16
2 V 3	2,1 (,82)	2,5 (1,1)	3,4	,001	,00

n1=377; n2=155; n3=97

PERSONAL NORM

	x̄1 (sd)	x̄2 (sd)	t	p	ω^2
1 V 2	1,1 (,42)	1,9 (,74)	12,9	,000	,24
1 V 3	1,1 (,42)	2,2 (,64)	15,6	,000	,34
2 V 3	1,9 (,74)	2,2 (,64)	2,7	,008	,00

n1 = 371; n2 = 151; n3 = 97

FIND OUT FOR SURE IF AT RISK

	Strength				Evaluation				Crossproduct			
	x̄1 (sd)	x̄2 (sd)	t	p	x̄1 (sd)	x̄2 (sd)	t	p	x̄1 (sd)	x̄2(sd)	t	p
1 V 2	2,2(1,1)	1,7(1,2)	4,1	,000	2,5(1,1)	2,0(1,4)	4,0	,000	5,8(3,9)	3,8(3,8)	5,2	,000
1 V 3	2,2(1,1)	1,6(1,4)	3,6	,000	2,5(1,1)	1,9(1,3)	3,9	,000	5,8(3,9)	3,5(4,0)	4,9	,000
2 V 3	1,7(1,2)	1,6(1,4)	0,7	,506	2,0(1,4)	1,9(1,3)	0,4	,650	3,8(3,8)	3,5(4,0)	0,5	,611

n1 = 373; n2 = 151; n3 = 97

WANT TO BE TOLD 'STRAIGHT'

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,8(0,7)	2,7(0,6)	1,5	,131	2,7(0,9)	2,3(1,1)	3,3	,001	7,5(3,3)	6,4(3,4)	3,4	,001
1 V 3	2,8(0,7)	2,5(1,1)	2,5	,016	2,7(0,9)	2,2(1,2)	3,1	,002	7,5(3,3)	6,3(3,5)	3,2	,002
2 V 3	2,7(0,6)	2,5(1,1)	1,5	,125	2,3(1,1)	2,2(1,2)	0,5	,591	6,4(3,4)	6,3(3,5)	0,3	,787

n1 = 368; n2 =150; n3 =97

GET PEACE OF MIND BY THE "ALL CLEAR"

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,7(0,7)	2,5(0,9)	2,6	,010	2,8(0,5)	2,6(0,7)	2,7	,007	7,9(2,3)	6,9(3,2)	3,3	,001
1 V 3	2,7(0,7)	2,4(1,1)	2,9	,005	2,8(0,5)	2,5(0,9)	3,1	,002	7,9(2,3)	6,6(3,3)	3,6	,000
2 V 3	2,5(0,9)	2,4(1,1)	0,8	,406	2,6(0,7)	2,5(0,9)	1,1	,264	6,9(3,2)	6,6(3,3)	0,9	,388

n1 = 373; n2 = 151; n3 = 97

COULD TAKE PRECAUTIONS

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,7(0,7)	2,4(0,9)	2,9	,004	2,7(0,6)	2,5(0,6)	3,9	,000	7,7(2,3)	6,4(3,1)	4,6	,000
1 V 3	2,7(0,7)	2,2(1,3)	3,8	,000	2,7(0,6)	2,3(0,9)	4,5	,000	7,7(2,3)	5,8(3,5)	5,0	,000
2 V 3	2,4(0,9)	2,2(1,3)	1,7	,085	2,5(0,6)	2,3(0,9)	1,6	,102	6,4(3,1)	5,8(3,5)	1,5	,144

n1 =371; n2 = 151; n3 = 97

BE TOLD BEST PRECAUTIONS

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,7(0,7)	2,4(0,9)	3,4	,001	2,8(0,4)	2,5(0,7)	4,8	,000	7,5(2,5)	6,2(3,0)	5,0	,000
1 V 3	2,7(0,7)	2,2(1,2)	3,6	,001	2,8(0,4	2,4(0,8)	4,7	,000	7,5(2,5)	5,8(3,2)	4,9	,000
2 V 3	2,4(0,9)	2,2(1,2)	1,3	,195	2,5(0,7)	2,4(0,8)	0,9	,345	6,2(3,0)	5,8(3,2)	0,8	,413

n1 =373; n2 = 151; n3 =97

STAY FIT LONGER

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,6(0,7)	2,2(1,0)	5,7	,000	2,7(0,6)	2,5(0,7)	4,0	,000	7,5(2,4)	5,7(3,4)	5,6	,000
1 V 3	2,6(0,7)	2,0(1,2)	5,4	,000	2,7(0,6)	2,3(0,9)	4,4	,000	7,5(2,4)	5,2(3,0)	6,6	,000
2 V 3	2,2(1,0)	2,0(1,2)	1,5	,124	2,5(0,7)	2,3(0,9)	1,7	,096	5,7(3,4)	5,2(3,0)	1,2	,226

n1 = 370; n2 = 151; n3 =97

LESSEN CHANCES OF LATER INFIRMITY

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,2(1,1)	1,8(1,3)	3,6	,000	2,6(0,8)	2,2(1,0)	3,8	,000	6,3(3,3)	4,9(3,7)	4,2	,000
1 V 3	2,2(1,1)	1,5(1,2)	5,4	,000	2,6(0,8)	2,1(1,1)	4,1	,000	6,3(3,3)	4,0(3,4)	5,7	,000
2 V 3	1,8(1,3)	1,5(1,2)	1,8	,080	2,2(1,0)	2,1(1,1)	1,0	,336	4,9(3,7)	4,0(3,4)	1,7	,084

n1 = 363; n2 = 149; n3 = 97

GET LECTURE FROM DOCTOR

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	0,8(2,1)	0,3(2,0)	2,1	,037	1,4(1,6)	1,0(1,6)	2,2	,028	3,0(4,4)	1,9(3,9)	2,4	,016
1 V 3	0,8(2,1)	0,4(1,9)	1,7	,080	1,4(1,6)	0,5(1,8)	4,9	,000	3,0(4,4)	1,3(4,0)	3,2	,001
2 V 3	0,3(2,0)	0,4(1,9)	0,1	,964	1,0(1,6)	0,5(1,8)	2,7	,007	1,9(3,9)	1,3(4,0)	1,1	,254

n1 = 369; n2 = 150; n3 = 97

BE SPURED TO HEALTHIER LIVING

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	1,9(1,4)	1,6(1,6)	2,8	,006	2,0(1,3)	1,7(1,4)	2,7	,007	5,2(3,6)	4,1(3,8)	3,1	,002
1 V 3	1,9(1,4)	1,3(1,6)	3,7	,000	2,0(1,3)	1,5(1,3)	3,8	,000	5,2(3,6)	3,0(3,5)	5,1	,000
2 V 3	1,6(1,6)	1,3(1,6)	1,0	,293	1,7(1,4)	1,5(1,3)	1,2	,230	4,1(3,8)	3,0(3,5)	2,1	,036

The following variables,relating to lifestyle changes, are reported twice. Firstly, for all respondents, including those who indicated that the items were irrelevant to them. Secondly, for only those respondents to whom the items were relevant. Both sets of anaylses were performed to establish:

(A) any differences in groups because of differences in smokers/non-smokers etc. (large means are found in these analysis because the scoring code for 'not applicable' was 8, whereas all other scores range from -3 to +3

B) any differences in groups because of beliefs held by respondents for whom the items were relevant (scoring codes here ranges from -3 to +3 only.

n1 = 364; n2 = 150; n3 = 94

	SMOKING (smokers & non-smokers)											
	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	5,7(2,1)	5,6(2,1)	,55	,581	5,4(2,6)	5,2(3,0)	,96	,339	36,0(21)	34,5(21)	0,7	,468
1 V 3	5,7(2,1)	5,2(2,3)	1,9	,057	5,4(2,6)	4,8(3,0)	2,1	,037	36,0(21)	31,4(23)	1,9	,059
2 V 3	5,6(2,1)	5,2(2,3)	1,3	,211	5,2(3,0)	4,8(3,0)	1,0	,306	34,5(21)	31,4(23)	1,1	,279

n1 = 102; n2 = 46; n3 = 36

	SMOKING(smokers only)											
	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	2,5(1,1)	2,6(0,8)	,36	,717	1,7(1,7)	1,0(2,1)	2,3	,025	4,6(5,2)	3,0(5,9)	1,6	,111
1 V 3	2,5(1,1)	2,6(0,8)	,35	,724	1,7(1,7)	1,1(1,5)	2,1	,041	4,6(5,2)	3,0(4,3)	1,7	,093
2 V 3	2,6(0,8)	2,6(0,8)	,01	,986	1,0(2,1)	1,1(1,5)	,28	,781	3,0(5,9)	3,0(4,3)	,00	1,00

DRINKING (drinkers & non-drinkers)

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	4,7(3,2)	5,0(3,1)	,82	,410	5,0(2,9)	5,2(2,9)	,74	,461	31,3(23)	33,0(23)	,72	,473
1 V 3	4,7(3,2)	3,9(3,6)	2,3	,024	5,0(2,9)	3,9(3,5)	2,6	,010	31,3(23)	26,9(24)	1,7	,098
2 V 3	5,0(3,1)	3,9(3,6)	2,6	,010	5,2(2,9)	3,9(3,5)	2,9	,005	33,0(23)	26,9(24)	2,0	,048

n1 = 123; n2 = 46; n3 = 43

DRINKING (Drinkers only)

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	0,9(2,1)	1,1(1,9)	,36	,717	1,1(1,5)	1,0(1,5)	,59	,557	2,2(4,4)	1,6(4,3)	,85	,396
1 V 3	0,9(2,1)	0,5(2,1)	1,2	,213	1,1(1,5)	0,3(1,6)	2,9	,004	2,2(4,4)	1,2(3,7)	1,3	,196
2 V 3	1,1(1,9)	0,5(2,1)	1,4	,166	1,0(1,5)	0,3(1,6)	2,0	,047	1,6(4,3)	1,2(3,7)	,39	,699

DIET ('healthy eaters' & others)

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	3,2(2,8)	3,1(2,9)	,52	,603	3,3(2,7)	2,9(2,9)	1,8	,069	16,8(21)	15,6(21)	,58	,563
1 V 3	3,2(2,8)	1,4(2,3)	5,8	,000	3,3(2,7)	1,7(2,1)	6,3	,000	16,8(21)	5,5(13)	6,4	,000
2 V 3	3,1(2,9)	1,4(2,3)	5,0	,000	2,9(2,9)	1,7(2,1)	3,6	,000	15,6(21)	5,5(13)	4,6	,000

n1 = 247; n2 = 107; n3 = 86

DIET (non 'healthy eaters' only)

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	1,6(1,5)	1,5(1,7)	,50	,617	1,7(1,3)	1,2(1,6)	2,6	,009	3,6(4,0)	3,0(4,2)	1,3	,202
1 V 3	1,6(1,5)	1,0(1,7)	2,9	,004	1,7(1,3)	1,2(1,4)	3,0	,003	3,6(4,0)	2,3(3,5)	2,7	,008
2 V 3	1,5(1,7)	1,0(1,7)	1,9	,054	1,2(1,6)	1,2(1,4)	,19	,848	3,094,2)	2,3(3,5)	1,2	,219

EXERCISE (regular exercisers & others')

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	3,3(2,6)	3,0(2,8)	1,1	,287	3,3(2,6)	3,0(2,6)	1,1	,291	16,5(20)	15,6(20)	,46	,648
1 V 3	3,3(2,6)	2,7(2,8)	2,1	,039	3,3(2,6)	2,8(2,7)	1,7	,098	16,5(20)	13,6(21)	1,2	,211
2 V 3	3,0(2,8)	2,7(2,8)	,95	,341	3,0(2,6)	2,8(2,7)	,67	,503	15,6(20)	13,6(21)	,76	,448

n1 = 252; n2 = 106; n3 = 70

EXERCISE (non-regular exercisers only)

	Strength				Evaluation				Crossproduct			
	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$ (sd)	t	p	$\bar{x}1$ (sd)	$\bar{x}2$(sd)	t	p
1 V 2	1,8(1,3)	1,4(1,5)	2,2	,031	1,8(1,2)	1,5(1,3)	1,7	,089	4,1(3,5)	3,2(3,4)	2,3	,020
1 V 3	1,8(1,3)	1,4(1,5)	2,3	,024	1,8(1,2)	1,3(1,2)	2,5	,013	4,1(3,5)	2,4(3,2)	3,6	,000
2 V 3	1,4(1,5)	1,491,5)	,20	,839	1,5(1,3)	1,3(1,2)	,88	,383	3,2(3,4)	2,4(3,2)	1,4	,159

APPENDIX 19

T-TESTS FOR 'OTHER' PILLS

The following tables correspond to tables 31 to 33, for 'new pills' shown on pages 152 & 153 in the main text.

Group 1 = respondents who marked any of the 3 'Yes' categories in answer to Q8 - intention to take part in pill testing of 'other pills' if asked.

Group 2 = respondents who marked any of the 3 'No' categories in answer to this question.

Together these respondents comprised 79% of responses to this question. 'Don't Know's were excluded from analysis

TABLE 3 Summary of T-Tests on Behavioural Belief Variables (Belief Strength Measures) Between Intending Participants and Non-Participants in Clinical Trials

VARIABLE	BELIEF STRENGTH								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	328	1,90	(1,50)	207	1,05	(2,02)	5,21	,000	<,10
Get info, re the pills	327	1,77	(1,53)	207	1,06	(1,97)	4,41	,000	<,10
Could ask for any info,	327	2,30	(1,19)	207	1,64	(1,78)	4,70	,000	<,10
Worry if felt 'off colour'	326	1,48	(1,72)	206	1,78	(1,76)	-1,89	NS	-
Worry re side effects	326	0,93	(1,50)	207	2,07	(1,25)	-9,49	,000	,14
Contributing to knowledge which might benefit self	326	2,07	(1,03)	207	1,18	(1,67)	6,85	,000	<,10
Contributing to knowledge which might benefit others	328	2,28	(0,85)	207	1,52	(1,62)	6,22	,000	<,10
Serving as a 'Guinea Pig'	327	1,93	(1,37)	207	2,43	(1,18)	-4,49	,000	<,10
Worry re long-term effects	327	1,39	(1,38)	207	2,19	(1,17)	-7,16	,000	<,10
Worry-acquired resistance	327	0,29	(1,67)	207	0,70	(1,70)	-2,76	,006	<,10
Worry re 'being taken off good pills'	366	0,06	(2,05)	202	0,15	(2,04)	-0,49	NS	-

TABLE 4 Summary of T-Tests on Behavioural Belief Variables (Outcome Evaluation Measures) Between Intending Participants and Non-Participants in Clinical Trials

VARIABLE	OUTCOME EVALUATION								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	328	2,76	(0,60)	207	2,62	(0,79)	2,12	,035	<,10
Getting info, re the pills	327	2,78	(0,56)	207	2,63	(0,86)	2,20	,029	<,10
Could ask for any info,	327	2,81	(0,59)	207	2,77	(0,60)	0,76	NS	-
Worry if felt 'off colour'	326	-0,53	(1,82)	206	-1,19	(1,82)	4,06	,000	<,10
Worry re side effects	326	-1,01	(1,68)	207	-1,87	(1,66)	5,78	,000	<,10
Contributing to knowledge which might benefit self	326	2,10	(0,98)	207	1,29	(1,34)	7,52	,000	,10
Contributing to knowledge which might benefit others	328	2,23	(0,97)	207	1,43	(1,26)	7,73	,000	,10
Serving as a 'Guinea Pig'	327	0,04	(1,68)	207	-1,67	(1,58)	11,82	,000	,20
Worry re long-term effects	327	-1,18	(1,63)	207	-2,01	(1,54)	5,79	,000	<,10
Worry-acquired resistance	327	-0,76	(1,57)	207	-1,49	(1,46)	5,51	,000	<,10
Worry re 'being taken off good pills'	326	-0,88	(1,56)	202	-1,48	(1,54)	4,28	,000	<,10

TABLE 5 Summary of T-Tests on Behavioural Belief Variables (Strength/Evaluation Cross-Products) Between Intending Participants and Non-Participants in Clinical Trials

VARIABLE	OUTCOME STRENGTH/EVALUATION CROSSPRODUCT								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	328	5,32	(4,51)	207	2,96	(5,68)	5,04	,000	<,10
Getting info, re the pills	327	5,01	(4,53)	207	2,82	(5,63)	4,72	,000	<,10
Could ask for any info,	327	6,54	(3,73)	207	4,57	(5,26)	4,69	,000	<,10
Worry if felt 'off colour'	326	-0,88	(4,67)	206	-2,33	(5,52)	3,13	,002	<,10
Worry re side effects	326	-1,18	(3,72)	207	-4,07	(4,96)	7,18	,000	<,10
Contributing to knowledge which might benefit self	326	4,82	(3,30)	207	2,50	(3,65)	7,56	,000	,10
Contributing to knowledge which might benefit others	328	5,47	(3,24)	207	3,15	(3,79)	7,26	,000	<,10
Serving as a 'Guinea Pig'	327	0,35	(5,39)	207	-3,93	(5,18)	9,85	,000	,15
Worry re long-term effects	327	-2,03	(3,74)	207	-4,67	(4,67)	6,80	,000	<,10
Worry-acquired resistance	327	-0,03	(3,16)	207	-1,12	(4,23)	3,18	,002	<,10
Worry re 'being taken off good pills'	326	0,37	(3,99)	202	0,14	(4,96)	0,54	NS	-
		23,76			0,02		p=,0000		

APPENDIX 20

DISCRIMINANT FUNCTION ANALYSIS

SCREENING

Table 6 below is a more detailed summary of the DFA shown in table 34 on page 155 in the main text.

TABLE 6 DFA with Strongest Vs Weaker Positive Intention to Participate in Screening as the as Discriminant Groups; and Attitudes, Subjective Norms, Personal Norms and Behavioural Beliefs (Crossproduct values) as Discriminating Variables

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D.F. Correlations	Pooled Within Group Correlations
	Group 1	Group 2		Personal Norm ,698	,868
Group 1(n=316)	81,8%	8,2%	,509	Personal Att, ,376	,600
Group 2(n=225)	21,8%	78,2%		XFFIT ,179	,362
Percent of "grouped" cases correctly classified = 86,14%				XFDEF ,138	,301
				Subj. Norm ,130	,465
				XFEAT ,117	,119
				XFDRINK -,009	,004
				XFINFRM -,097	,274
				XFPREVMS ,055	,315
				XFSTRGHT -,049	,196
				XFPEACE -,044	,220
				XFLECT ,030	,154
				XFTLDPMS ,029	,298
				XFSMOKE ,016	,053
				FXECERC ,011	,046
				FXSPUR ,004	,240

Variables commencing XF represent crossproduct values for behavioural beliefs detailed in items 7 to 19 p 3 of the questionnaire (appendix 14).

CLINICAL TRIALS - ' NEW PILLS'

The following 2 tables are more detailed summaries of tables 36 & 38 on page 156 of the main text.

NEWYES 1 = respondents who indicated some degree of positive intention to participate in clinical trials of 'new pills'

NEWYES 2 = respondents who indicated some degree of negative intetion to participate

NEWYESB 1 & 2 correspond to NEWYES but refer to participation in clinical trials of 'other pills'

'Don't Know's were excluded from anlayis

TABLE 7 Summary of DFA with NEWYES as Discriminant Groups and Attitudes, Subjective Norms, Personal Norms and Behavioural Beliefs (Crossproduct values) as Discriminating Variables

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=274)	91,6%	8,4%	,404	Personal Norm	,625	,866
Group 2(n=214)	16,8%	83,2%		Attitude	,342	,730
Percent of "grouped" cases correctly classified = 76,27%				XFSEFFS	,231	,273
				Subj, Norm	,199	,588
				XFGPIG	,142	,402
				XFCONTO	-,125	,286
				XFOFFCOL	-,118	,123
				XFOFFGPS	-,116	,036
				XFCONTME	,076	,308
				XFNOTWRK	-,066	,104
				XFASKINF	,027	,186
				XFSTINFO	,020	,192
				XFPINFO	,012	,204
				XFLEFFS	-,009	,259

NB Variables commencing XF represent crossproduct values for behavioural beliefs detailed in items 14 to 24 p 9 of the questionnaire (appendix 14).

TABLE 8 Summary of DFA with NEWYES as Discriminant Groups and Behavioural Beliefs (Crossproduct values) as Discriminating Variables

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F. Correlations	Pooled Within Group Correlations
	Group 1	Group 2			
Group 1(n=276)	82,2%	17,8%	,716	XFGPIG ,624	,774
Group 2(n=217)	31,3%	68,7%		XFSEFFS ,387	,528
Percent of "grouped" cases correctly classified = 76,27%				XFCONTME ,376	,583
				XFOFFCOL-,196	,237
				XFOFFGPS-,167	,058
				XFPINFO ,150	,378
				XFNTWRK -,100	,199
				XFCONTO ,097	,547
				XFASKINF ,083	,360
				XFLEFFS ,039	,496
				XFSTINFO ,026	,355

CLINICAL TRIALS - 'OTHER PILLS'

The following 3 tables relate to 'other pills' and correspond to 'new pills' tables 36 to 38 shown on page 156 of the main text.

TABLE 9 DFA with NEWYESB as Discriminant Groups and Attitudes, Subjective Norms, Personal Normsand Behavioural Beliefs (Crossproduct values) as Discriminating Variables

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=306)	93,8%	6,2%	,433	Personal Norm	,642	,875
Group 2(n=194)	19,1%	80,9%		Attitude	,367	,742
Percent of "grouped" cases correctly				XFSEFFS	,270	,296
classified = 88,80%				Subj, Norm	,137	,579
				XFSTINFO	,132	,223
				XFOFFCOL	-,125	,130
				XFCONTO	-,105	,292
				XFOFFGPS	-,097	,044
				XFPINFO	-,091	,218
				XFASKINF	,086	,222
				XFGPIGS	,085	,384
				XFLEFFS	-,043	,273
				XFCONTME	,034	,291
				XFNTWRK	-,012	,123

TABLE 10 Summary of DFA with NEWYESB as Discriminant Groups and Attitude, Subjective & Personal Norms as the IVs

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=329)	92,7%	7,3%	,451	Personal Norm	,664	,903
Group 2(n=210)	21,0%	79,0%		Attitude	,429	,762
Percent of "grouped" cases correctly classified = 87,38%				Subjective Norm	,130	,568

TABLE 11 DFA with NEWYESB as Discriminant Groups and Attitudes, Subjective Norms, Personal Normsand Behavioural Beliefs (Crossproduct values) as Discriminating Variables

Actual Group	Predicted Group		Wilks Lambda	Standardised Canonical D,F, Correlations		Pooled Within Group Correlations
	Group 1	Group 2				
Group 1(n=308)	85,7%	14,3%	,741	XFGPIG	,537	,742
Group 2(n=197)	38,1%	61,9%		XFSEFFS	,454	,574
Percent of "grouped" cases correctly classified = 76,44%				XFCONTME	,266	,553
				XFOFFCOL-	,211	,252
				XFCONTO	,182	,559
				XFASKINF	,172	,430
				XFOFFGPS-	,155	,072
				XFSTINFO	,153	,417
				XFNTWRK -	,060	,237
				XFLEFFS	,044	,527
				XFPINFO	,022	,406

APPENDIX 21

SAMPLING SOURCE T-TESTS

Tables 12 and 13 give summaries of sampling source differences relating to participation in clinical trials of 'other' pills. The values given correspond to those relating to 'new' pills shown in tables 47 and 49 on pages 162 and 163 of the main text.

Group 1 = respondents sampled from the electoral roll; Group 2 = respondents sampled from medical sources

TABLE 12 Summary of T-Tests on Normative Beliefs and Perceived Likelihood of Trial Invitation Between Groups 1 and 2 as Detailed Above

VARIABLE	T-TEST VALUES								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Personal Norm	314	-0,17	(2,11)	365	0,31	(2,02)	-3,01	,003	<,01
Likelihood of invitation	314	-1,91	(1,42)	365	-1,23	(1,81)	-5,46	,000	,04

TABLE 13 Summary of T-Tests Showing Significant Differences Between Groups 1 & 2 (above) Regarding Behavioural Belief Strength

VARIABLE	BELIEF STRENGTH								
	GP_1			GP_2					
	n	x	(sd)	n	x	(sd)	t	p	ω^2
Getting info, re the study	318	1,40	(1,82)	367	1,84	(1,59)	-3,36	,001	,01
Getting info, re the pills	318	1,34	(1,85)	366	1,74	(1,58)	-3,09	,002	<,01
Risk acquired resistance	318	0,72	(1,68)	366	0,32	(1,66)	-3,13	,002	,01
Might be taken off good pills	316	0,46	(1,99)	358	-0,12	(2,01)	3,83	,000	,01